A REPORT ON THE GREEN PLAN CONSULTATIONS

AUGUST 1990

The Green Plan
A NATIONAL CHALLENGE

Government of Canada   Gouvernement du Canada

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How to Read This Document

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The report is organized into two sections, like the previous document, *A Framework for Discussion on the Environment*; 1)Improving Decision Making, and 2) Action on Environmental Issues. The first section deals with such cross-cutting themes as science, education, enforcement, decision-making processes and partnerships. The second section deals with specific environmental issues identified in the consultation document, such as global warming and toxic substances, and other publicly identified issues, including energy and land use.

Each of the two sections is divided into sub-sections. Each sub-section begins with a review of what the Government said in *A Framework for Discussion on the Environment*. This is followed by an overview of What Participants Discussed, highlighting key themes. And then by a digest report of What Participants Recommended, including objectives and specific actions in support of those objectives. Each sub-section concludes with Suggestions for Further Consideration.

The Suggestions for Further Consideration represent possible policy, program and legislative elements of ***The Green Plan***. They are intended as a basis for a more focused debate which will help in the establishment of priorities. There is considerable duplication of suggestions between sections of the report. This was done deliberately. Each section was written to stand on its own as much as possible; however, since many types of initiatives (e.g. information, regulations, enforcement) cut across issues, it was often necessary to repeat these. Each set of options draws on what we have learned from the consultations and builds on the framework set out in the consultation document. Some of the options are mutually exclusive. Others may give rise to significant issues of principle and prove controversial. Finally, the sheer number of suggestions is beyond the capacity of the Government to finance in the foreseeable future. For all these reasons, the final ***Green Plan*** will contain a much smaller set of actions.

Introduction

Beginning the Dialogue

On March 29, 1990, the Government of Canada released *A Framework for Discussion on the Environment*, to begin a public dialogue on a comprehensive national environmental strategy and action plan, ***The Green Plan.***

The Government set a long-term objective for Canada, which is **"to make Canada, by the year 2000, the industrial world's most environmentally friendly country,"** by ensuring that the activities of businesses, individuals, communities and governments are consistent with the concept of sustainable development." By sustainable development, we mean economic development that can be accommodated within the finite limits of the natural environment. *A Framework for Discussion on the Environment* shared with Canadians an environmental vision, not of a particular future state, but of a new and better way of making environmental decisions and a more balanced relationship between the way we see the environment and our own activities, individually and collectively. The report of the World Commission on Environment and Development (the Brundtland Commission) said "sustainable development is not a fixed state of harmony, but rather a process of change ...."

In the consultation document, the Government identified improved decision making as the key to achieving the goal of sustainable development. That is not necessarily to say that Canadians have been willfully irresponsible by disregarding environmental considerations in the past. We have, as a country, enjoyed a number of environmental successes through co-operative efforts — in the areas of acid rain and ozone depletion, for example. Individual Canadians, businesses, and all levels of government have been taking action to restore and protect the environment. However, we must build on these successes; we must be more systematic in our approach to environmental issues.

Given that overall framework, the Government recognized the need for Canada to push ahead toward solving specific environmental problems. The consultation document outlined a number of these problems, and set out possible — not necessarily preferred — solutions. The purpose was to stimulate public debate and to prompt discussion of appropriate responses. It was not to be preclusive and to foreclose options for consideration.

Canadians responded to the Government's invitation to discussion. During the first phase, more than 6,000 people attended 41 information sessions held across the country. They asked questions, expressed concerns and identified needs for action. In phase two, more than 3,500 people participated in two-day consultation workshops in 17 capital cities and major centres in the provinces and territories. During a period of three months, the Government heard from many other Canadians, who wrote letters or postcards, filled in response forms, and submitted detailed briefs.

Participants in the process represented a broad cross-section of interests and viewpoints, including: concerned individuals of all ages, native groups, both small and large companies in the business community, provincial and local governments, environmental organizations, community and consumer groups, the scientific and academic communities, labour, women's groups and church groups.

Towards Setting Priorities

This report summarizes what participants talked about and the actions they want taken. As in any consultation process, everyone did not agree, nor were all points of view equally represented. Moreover, by the very nature of the process itself, where participants were asked to look ahead in the development of environmental policy, there was sometimes little recognition given to federal environmental policies, programs and legislation, or those of other jurisdictions and organizations that are already in place. As a result, the views summarized in this report are not necessarily complete or balanced. Nor do they represent a consensus. Nonetheless, all these comments do contribute to the building of a sound ***Green Plan,*** and are a starting point in a process that will continue through the implementation of ***The Green Plan.***

This report also identifies the initiatives that the Government believes require more detailed consideration by Canadians before decisions are made on the final elements of ***The Green Plan.*** Not all of these initiatives can become elements of ***The Green Plan***; priorities must be set and choices made.

It is now time to reflect on what has been said and learned. It is also time to begin setting priorities. There is much to be done, and we cannot hope to do it all at once. The resources of the federal government are limited and there are many competing needs to which the Government must respond. ***The Green Plan*** must be undertaken in a fiscally responsible manner. It must also respect the responsibilities and jurisdictions of other levels of government, and recognize that government actions alone cannot meet the challenge of the increasing scope and complexity of environmental problems. All segments of society must accept responsibility and act. Finally, while the Government remains committed to providing international leadership on environment issues, lasting solutions to many environmental problems such as global warming require a global commitment to action.

In releasing this paper, ***Report on The Green Plan Consultations***, the Government enters the last phase of preparation of ***The Green Plan.***

Publicly Identified Concerns

The public record contains strong and important messages.

First, the Government must take additional action now. Existing environmental activities by all levels of government are taken as given. The consultations confirmed that Canadians are looking to the federal government to push ahead with new and more comprehensive initiatives.

At the same time, Canadians are expressing distrust of governments. During the consultations, there was cynicism about whether the Government was really listening and would respond to advice from the public. Yet Canadians very much want federal government leadership on the environment.

Despite criticism of the compressed time frame for the consultation process, participants welcomed the opportunity to make comments and recommendations. There was strong support for continuing public involvement in the environmental policy-making process, particularly during the implementation phase of ***The Green Plan.*** As one participant insisted, "Consultation is a process and not an event."

Recognizing that the development of an environmental agenda is a complicated task, participants generally shared a sense of optimism that priorities could be established and solutions could be implemented. The consultations confirmed that the public, the private sector, non-government organizations and governments at all levels are willing to work together. There was a sense of openness among the participants that allowed them to listen to each others' views and to find common ground in many areas.

Although the consultations did not address the cost of proposed actions, they did identify cost as an important constraint. Many recognized that with the current government fiscal realities, not all initiatives could be funded and identifying the priorities would be crucial.

Participants felt that the consultations were a chance for all sectors of society to work together to develop a ***Green Plan*** that will reflect Canadian needs, set priorities and produce results. Participants wanted to capitalize on the networks established through the consultation exercise within the federal government and with the various stakeholders.

Participants also offered many specific policy recommendations reflecting a high degree of commonality.

The participants supported the underlying policy theme of ***The Green Plan***; which is the need to improve environmental decision making at all levels of Canadian society. Most participants agreed with the concept of sustainable development, and felt that ***The Green Plan*** should be based on clear and measurable objectives.

More environmental **information** on all environmental issues in a form that is concise, credible, readily accessible, and expressed in layman's terms was cited as essential. The need for better co-ordination of existing databases was reiterated consistently throughout the consultations. The notion of developing environmental indicators as aids to decision making was also well received.

Environmental **education**, through both the formal and informal education systems was a second major theme. It was suggested that through improvements to education mechanisms, the public, especially youth, will be better equipped to make environmental considerations an integral part of their decision making. Education was regarded as a way to alter those value systems and attitudes that would, in turn, lead to more environmentally sound lifestyles.

Not surprisingly, **legislation and enforcement** were pervasive themes throughout discussions, with requests for new legislation in a number of areas. There was strong support for the consistent application of existing legislation and regulations. Increased resources were seen as necessary to enforce environmental statutes and their accompanying regulations. It was generally held that the federal government should set minimum national standards for the environment, and that the federal and provincial governments should develop complementary environmental regulations and policies for their jurisdictions.

Science was another area recognized as needing more emphasis and support. It was acknowledged that improved science is necessary for better information and decision making. Canada's current scientific research and development efforts were viewed as lagging behind those of other nations and in need of additional funding. The participants wanted to see more fundamental research on a longer-term basis along with an emphasis on applied research, especially in areas such as toxic substances and their effect on human health and safety, energy, global warming, and agricultural and forestry practices.

There was also a demand for increased technology transfer among governments, industry and academia, and more funding for collaborative research. Canada, many felt, should also be taking steps to ensure international technology transfer, particularly to Third World countries and that efforts should focus on marketing Canada's unique scientific skills, and forming new international alliances whereby Canada would have access to other sources of scientific expertise and make better use of existing international scientific research.

The relationship between the environment and **human health** was of great concern to the participants, who felt that it is not being adequately addressed. There was a demand for more research into risk assessment to anticipate and respond to health- and emergency-related concerns, and for more effective communication of results.

Economic instruments were viewed as important tools for achieving environmental goals. However, most indicated that these instruments required further study and assessment before they should be implemented. Pilot projects to evaluate the impacts of specific economic instruments were proposed. Many of the participants supported a "green tax," provided the revenues were directed to obvious environmental actions. Industry also expressed concerns about the economic impacts of environmental taxes, particularly Canada's competitive position in international markets.

Participants called for more open and environmentally sensitive decision-making processes. First and foremost, they want to participate as partners in those processes. They are in full agreement with a federal government review of policies, programs and legislation to ensure that environmental factors are adequately considered.

The participants emphasized that, the federal government must be a role model for **environmental stewardship.** Expectations are high that the federal government will exhibit exemplary behaviour in the area of procurement policies, recycling and waste disposal, energy efficiency and conservation, environmental codes of practice, and policy and legislation. Participants identified a number of new mechanisms for consideration, including the creation of an environmental auditor general or an environmental ombudsman to conduct independent assessments. The Environmental Assessment and Review Process was a subject of much discussion during the consultation process, and most expressed support for its enactment as soon as possible.

The participants supported the need for a co-ordinated **ecosystem approach** to environmental management. However, it was recognized that **new partnerships** between governments, the private sector and non-governmental organizations were needed to achieve better integration. The need for stronger partnerships with aboriginal peoples was emphasized.

While participants called for Government action on all the issues outlined in the consultation document, four specific environmental issues were identified as requiring immediate action: global warming, toxic substances, waste management, and water quality and quantity.

Global warming was seen as having tremendous implications for Canada's economic future as well as for the integrity of our ecosystem. Many people suggested, therefore, that this issue required urgent co-operative efforts. It was felt that the federal government should take the lead on the global warming issue, working in partnership with all stakeholders and that mechanisms such as emission reduction targets, use of alternative energies, environment-friendly transportation systems and economic instruments should be examined further to address this issue. In addition, further research to reduce current scientific uncertainties on the implications of global warming for the environment was recommended.

The issue of **toxic substances** is not new and despite current efforts, additional action was demanded, particularly for increased monitoring and assessment of toxic substances in the natural environment, in the home, the workplace and in consumer products. Participants wanted to see regulations, standards and codes enforced to better protect human health and the environment. They also called for the wide distribution of information and educational materials on the use and management of toxic substances, as well as information on alternatives in order to make more informed choices. **Waste management** was a major concern expressed across the country. Participants reflected an eagerness to become more actively involved in strategies to reduce waste at the source, for example, in recycling programs. There was overwhelming support for the development of new waste reduction technologies in the industrial sector, reduction of consumer goods' packaging, and increased education and awareness programs to encourage the application of principles of the 4 Rs: reduce, reuse, recycle, and recover.

Participants were also concerned with **water quality and quantity** issues. They recognized that clean, safe and drinkable water is vital for sustaining the health and well-being of all living things. In this light, they called for water quality standards and regulations, and mechanisms such as more appropriate water pricing to encourage protection and efficient use of this valuable resource. Increased research and monitoring of fresh and marine water quality, and wide distribution of information were viewed as necessary to understanding the effects of water contamination.

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Each of the two sections is divided into sub-sections. Each sub-section begins with a review of what the Government said in *A Framework for Discussion on the Environment*. This is followed by an overview of What Participants Discussed, highlighting key themes. And then by a digest report of What Participants Recommended, including objectives and specific actions in support of those objectives. Each sub-section concludes with Suggestions for Further Consideration.

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Next Steps

Formal public consultations on the development of ***The Green Plan*** will end with a national wrap-up meeting in Ottawa, August 20 and 21, 1990. Canadians representing a wide range of backgrounds and views will be asked to review the Suggestions for Further Consideration and provide the Government with specific recommendations for the policy, program and legislative elements of ***The Green Plan***. These recommendations will feed directly into the Government's final decisions on ***The Green Plan***.

The Green Plan will be released in the fall, and will be followed by ongoing public consultations on implementation of many action plan elements.

Section 1

Improving Decision-making

- Factors that Affect Decision-making
- Changing Decision-making Processes
- Strengthening Partnerships

Science and Technology

In the consultation document, *A Framework for Discussion on the Environment*, the Government identified environmental science and technology as a key area for consultation that will lead to better decision making. Good science is essential for good environmental policy and sound regulation. Science and technology are also critical in devising solutions and new approaches to environmental problems. Carried out by governments, universities, and the private sector, environmental science — encompassing both physical and social science — helps to measure progress and to identify and solve new problems in a timely manner. It also generates economic opportunities by helping to develop new industries.

The federal government pledged to significantly increase its commitment to environmental science and technology. Working with its partners — other governments, universities, and the private sector — it cited as priorities research into environmental health, toxicology, agriculture, fisheries, forestry, and water and air pollution.

One option suggested in the consultation document was an interdepartmental panel, similar to the Panel on Energy Research and Development, to foster co-operative science within the federal government. Another option suggested by the Government was a new program to be administered by the three national granting councils (the National Research Council, the Social Science and Humanities Research Council and the Medical Research Council) to promote fundamental environmental research at Canadian universities. The Government also said it would consider a program for funding research proposals originating from outside the government.

Because market barriers may impede the commercialization of useful new technologies, we suggested that there was a need for mechanisms to promote the demonstration and commercialization of environmental technologies, such as a cost-shared technology demonstration fund.

The Government also noted that Canada's international scientific efforts need to be expanded to help develop solutions to global environmental problems. Priority areas include toxicology, climate change, acid rain and ozone layer depletion.

> **Only through greater research will we properly understand any changes that may be taking place in the global environment.**
>
> ***The Coal Association of Canada***

What Participants Discussed

The participants in the consultations overwhelmingly supported the Government's proposal to significantly increase its commitment to environmental science and technology. While not all agree that better science will necessarily lead to better decisions, there was general agreement with the need for better science as a starting point to improve decision making nationally and internationally.

While they made many suggestions for areas of priority research and development, participants were equally interested in the ways in which Government might implement better science and technology in Canada. Not only did they identify areas where research is required, such as toxic substances, ecosystems, energy, climate, economics, agricultural and forestry practices, and waste management, they also made numerous recommendations on funding mechanisms, institutional arrangements, priority setting, data access, international aspects, and policy making.

The participants believed that the federal government should take the lead to establish mechanisms that will result in credible and accessible research. They want to see more fundamental research on a longer-term basis, ensuring that the study of natural systems is done in a multi-disciplinary and co-operative way. There was concern that a reallocation of existing resources of federal research and granting agencies to support environmental research would result in the further dilution of science in Canada. Several participants also felt that new structures are not needed and would simply add unnecessary bureaucracy and hierarchy; it would be better to use and reorient existing structures. Participants wanted to encourage young people to enter the sciences and remain in Canada to work. They also recognized the need to integrate social and economic sciences more closely with the physical sciences. Canada must be a player in the international research and technology field, using international research, and contributing results where they can best contribute.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To provide funds for the fundamental, long-term research increasingly required for understanding complex ecosystems.

Action

- Make environmental science and technology a government priority with an increase in funding to all sectors.
- Increase funding of national research and development to 2.5 percent of the Gross Domestic Product by 2000, thereby matching spending by other countries.
- Ensure that 25 percent of government and industry funds are dedicated to fundamental research and 75 percent to applied research.
- Fund increased research from a "green tax," a "carbon tax," royalties, and other sources. A portion of any tax revenue resulting from special environmental taxes should be visibly targeted to research and be reported on annually.

> **Science and technology... cannot be relied upon to solve our environmental problems for us. In fact, a strong argument can be made for the notion that our unquestioning faith in technology and science has created many of the problems we face today.**
>
> *Arthur Hill, Chairman*
> *Carman United Church*
> *Sardis, British Columbia*

- Provide direct or seed funding for research, encouraging industry to take responsibility for most technological development.
- Explore co-operative funding approaches such as:
  - an endowment fund established by government, private sources and universities;
  - a national research fund as a tax-deductible charity;
  - lottery funds; and
  - partnerships with philanthropic organizations.
- Distribute funds by:
  - offering unconditional grants to excellent and qualified research groups;
  - increasing funding of northern science;
  - funding universities to do environmental research;
  - establishing a simplified "unsolicited proposals" program;
  - starting a program to fund research proposals originating outside the Government of Canada;
  - dedication of specific funds to selected issues or sectors to be spent in that sector;
  - revitalization of the more successful federal funding programs;
  - putting funds for research into the Environmental Partners Fund;
  - providing separate budgets for environmental emergencies;
  - establishing a cost-shared technology demonstration fund and an increased Environmental Research Subventions
  - a groundwater research centre in Prince Edward Island; and a
  - a national toxicology network.
- Improve the use of current structures and organizations by making better use of people with a variety of expertise, such as aboriginal people, farmers, fishermen and women.
- Expand the role of the Northern Science Institute and promote environmental research through the Social Science and Humanities Research Council.
- Use provincial research organizations to conduct environmental research.
- Encourage the National Research Council to lead in energy-saving research.

Any scientist worth his or her salt should be able to explain results in straightforward language and without twenty dollar words.

Joan Melanson, Staff Associate
Immanuel United Church
Winnipeg, Manitoba

- Give priority to funding institutions and non-profit organizations.

- Redeploy military efforts into research role.

Objective

To educate a sufficient number of scientists in Canada to do the work needed.

Action

- Train, attract, keep, and maintain excellent environmental scientists in Canada by:
  - funding graduate studies in interdisciplinary sciences;
  - using internship programs to encourage students to pursue careers in science;
  - creating student job programs in sciences through subvention programs;
  - providing federal- and industry-sponsored scholarships to attract women and native people to science;
  - showing scientists as role models;
  - attracting people into sciences through public awareness and through curriculum changes at public schools;
  - enhancing communication between federal researchers through conferences, workshops, sharing of data, and staff interchanges;
  - developing policies regarding intellectual property and rewards to scientists and institutions;
  - assisting scientists in better communicating their research and giving them credit for communicating information; and
  - increasing the supply of toxicologists.

Objective

To demonstrate the use of scientific information and advice as the basis for policy and decision making.

Action

- Give science greater influence on policy making by involving independent scientists in environmental decision making.

- Appoint science advisors to act as brokers between scientists and decision makers.

- Separate scientific and regulatory responsibilities to ensure the integrity and credibility of environmental science.

- Enable scientists to communicate results in an easily understandable fashion in order to improve decision making in society. A key aspect to communicate is the limitation of scientific understanding and results.

Objective

To assist the private sector in developing effective, efficient and economic technologies, and make these available to the "grass roots" in Canada and abroad.

Action

- Create a government/private sector, cost-shared technology demonstration fund to assist in developing "softer" technologies, such as strategies, management skills, and institutional arrangements for export purposes.

- Assist small innovators, entrepreneurs and inventors in sponsorship, marketing and patent application for inventions that could benefit the environment.

- Develop internationally marketable environmental technologies through the Department of Industry, Science and Technology.

- Support technology-transfer mechanisms to bring the results of research and development into the workplace.

- Give priority to technology development such as:
  - technologies that assist energy conservation and environmentally safe industrial processes;
  - environmental technologies of national and global benefit;
  - inexpensive monitoring technologies to test aging systems for pollutants;
  - monitoring technologies based on proven Canadian capabilities such as use of the Geographic Information System, remote sensing, and visualization tools;
  - technologies for anticipating problems and modelling scenarios;
  - technology to slow ozone depletion (particularly in the Third World);
  - coal combustion technology; and
  - improved disposal technologies and alternatives.

Objective

To support the development and maintenance of adequate environmental baseline data sources.

Action

- Conduct research to identify key monitoring and reporting targets in the environment.

- Set baseline standards, factors and monitoring targets.

- Assess the adequacy of regional and national data sets now in existence.

- Emphasize integrated monitoring networks.

- Direct funding to primary field work and data collection to ensure high-quality baseline data.

- Establish and expand data banks and provide better access.

- Increase the public involvement in monitoring in such areas as wildlife inventories.

Objective

To show leadership in international science in addressing global environmental problems.

Action

- Work towards an international environmental database.

- Avoid duplication and use international research results.

- Encourage international research exchange.

- Develop international protocols for scientific analysis and testing for regulatory purposes.

- Continue long-term participation in international organizations such as the World Meteorological Organization (WMO), World Health Organization (WHO), Organization for Economic Cooperation and Development (OECD), United Nations Environment Program (UNEP).

- Continue participating in international developments in numerical modelling.

- Encourage the building of international research networks.

- Support an international marketing effort for the export of environmental technology in the areas of forestry, energy and a host of other technological fields.

Objective

To use social and economic sciences as well as physical sciences to resolve environmental problems.

Action

- Conduct research work in the area of decision-making approaches and processes, as well as other aspects of social science.

- Develop social sciences research on environmental issues and include social science expertise on research panels.

- Conduct economic research, including job loss or gain, of environmental programs and integrate the environmental value of natural resources into decision making.

- Assess the socio-economic consequences of extreme climatic variations as an example of a multi-disciplinary problem that should be tackled through the physical, social and economic sciences.

Many areas were emphasized in public consultations as priorities for increased attention by science and technology. Generally, these items are integrated in other chapters. The actions outlined in this chapter are applicable to all the other issue oriented actions proposed.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Significantly increase federal resources devoted to environmental science and technology over the next five years, particularly as it relates to monitoring environmental changes, regulatory and policy development, and identification of solutions to environmental problems, including those that could give rise to new economic opportunities.

2. Fund increased research through innovative use of economic instruments.

3. Create and support a Canadian Ecosystem Institute to investigate environmental issues from an ecosystem perspective.

4. Create a federal interdepartmental Panel on Environmental Research and Technology. Modelled after the Panel on Energy Research and Development and managed by Environment Canada, it could serve to allocate science resources to meet the needs of changing environmental priorities, and to develop partnerships to mobilize public- and private-sector resources on both a national and international basis.

5. Establish a program to accelerate basic environmental research within universities.

Science needs to serve and inform us, rather than merely providing us with more material possessions.

Thames Region Ecological Association
London, Ontario

6. Develop a program to fund environmental research proposals originating from universities and the private sector that address government research priorities.

7. Create a cost-shared environmental technology demonstration program to support the development of technology in areas such as pollution control, waste management, recycling, remote sensing and clean process technologies.

8. Focus federal technology development efforts on industrial processes, pollution monitoring, modelling, substitutes for ozone-depleting chemicals and technologies, recycling materials, renewable energy and clean coal combustion.

9. Increase Canada's participation in international scientific efforts to support solutions to global environmental problems such as ozone layer depletion, global warming and acid rain.

10. Consider methods of increasing industry investment in environment-related R&D.

11. Assist international marketing efforts in support of exporting Canadian environmental technologies.

12. Provide adequate resources to gather and maintain extensive baseline environmental data, with particular consideration to sustainable development indicators that are of use in future policy development.

13. Develop volunteer networks to provide data and monitor wildlife populations.

14. Conduct socio-economic research on priority topics such as the employment impact of environmental programs, the integration of the environmental value of natural resources into decision making, and the impact of climate change.

Better Information

Good information, widely available and understandable, was identified in the consultation document, *A Framework for Discussion on the Environment*, as a key input to sound environmental decision making. The Government committed to improving the quality, consistency, reliability, and accessibility of environmental information but noted that environmental reporting was at an early stage in its development, with much basic work still to be done. As such, the Government asked Canadians how best to organize its efforts and work co-operatively with other governments, the private sector and other groups to achieve its objectives.

In the consultations document, the Government put forward several proposals to improve the environmental information available to Canadians. These included a pilot project to further develop satellite environmental accounts, supplementing the five year state-of-the-environment report with less detailed but more frequent reporting (for example, an annual environmental outlook and policy statement); and establishing a national environmental library.

> **If *The Green Plan* is to succeed at all, a fundamental requirement is to have a consistent standardized format of data recorded and archived for the monitoring and assessment of environmental conditions.**
>
> ***PhD Associates Inc.***

What Participants Discussed

The need for better information was a theme that ran through almost all information sessions, consultation workshops, briefs and letters regardless of the issue under discussion. Clearly, participants felt that information was a key factor affecting decision making and that major efforts should be made in this area.

They encouraged the Government to focus its efforts in three major areas: the nature of the information that should be reported; improving the accessibility to information; and improving the mechanisms to communicate the information as a a way to improve environmental literacy.

Despite the fact that many participants saw the federal government as an important player in developing databases and reporting on the environment, many expressed concerns over its apparent lack of neutrality. Opinions as to who should be providing such reporting varied: some suggested an independent national agency and others a multi-disciplinary team representing all stakeholders.

An overwhelming majority agreed that State of Environment reports should be maintained and improved and that an environmental library was desirable. Participants felt there was a need for more effective mechanisms to share environmental information between the public and decisions-makers.

Not many participants responded to ***The Green Plan's*** objective dealing with the development of national satellite accounts, primarily because they did not understand what they were. Responses were wide-ranging, some expressing a lack of understanding, some expressing support and others expressing concerns over how some of the natural resource information would be accounted for.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To have access to more accurate, reliable and credible environmental and resource information.

Action

- Develop, in co-operation with a multi-partite scientific group, a set of common and standard environmental indicators of sustainable development. These indicators should relate to ecosystem health and stress, and should be used by federal, provincial, industrial, environmental and other groups. Such parameters should be regularily monitored to establish the present and future state of the environment's health. Specifically, indicators on health, ecological systems, wildlife, energy, and material consumption are required in addition to the more conventional economic indicators.

> **The public needs a trustworthy, continually updated source of information. Written publications from the federal government should be freely available in public libraries while the CBC (radio/television) should provide regular environmental updates. They should be kept scientifically understandable by the average person.**
>
> *J.R. Frey, Executive vice-president*
> *General Motors*

- Establish a neutral agency to address environmental reporting in Canada as well as Canada's effects on international environmental problems. To ensure that the Government lives up to its commitments, information should come from an impartial source. Environmental non-governmental organizations (ENGOs) and businesses should be involved in this process.

- Establish a "national quality of life index (NQLI)" that would include components such as accessibility to wildlife areas, natural parks, and other elements, so that governments and industry use the NQLI instead of the Gross National Product in their accounting systems.

- Standardize the collection of data and report environmental information in a balanced way.

- Examine all existing databases and using a set of established criteria evaluate the credibility, value and relevance of the scientific information they contain.

- Regulate a system of supplying data through distinct research procedures. This data should be available to governments, industry and other groups to support research.

- Compile environmental baseline data using an ecosystem approach that is local-to-global in scope and uses an interdisciplinary team from various stakeholder groups.

- Update inventories of all natural resources, giving priority to old-growth forests, tourism resources and wildlife.

- Fund environmental and research groups in order to help them continue to provide information to the public.

Objective

To improve monitoring and assessment of the state of the environment and report regularly in order to help make more informed decisions.

Action

- Produce, on a regular basis (annually), State of Environment reports through an independent group (or at arm's length from government). Provide stakeholder support to assess current efforts and progress in making improvements.

- Produce regular reports on the State of the Northern Environment using local knowledge as one source of information. Research and monitoring could be done by new scientific structures or by expanding the role of the Northern Institute, which is linked to national and international information centres.

- Report regularly on Canada's progress in achieving the "4 Rs" (Reduce, Reuse, Recycle and Recover) and compare our progress with that of other countries.

- Support state of environment reporting at provincial levels through the Canadian Council of Ministers of Environment (CCME) and provide standards for reporting.

- Develop a monitoring program that measures behavioural and attitudinal changes over the long term.

- Increase monitoring programs on water quality; forest resources and management practices; uses of renewable and non-renewable resources; atmospheric weather data; air quality; changing land-use patterns in agriculture; pollutants affecting health; use and effects of chemicals and sprays; and the health of fisheries and stream habitat across the country.

- Integrate sectoral monitoring programs into broader ecosystem monitoring programs.

Objective

To develop a natural resource accounting system.

Action

- Ensure that satellite accounts are accompanied by additional environmental information, and that information requirements are not limited only to available data.
- Develop an environmental costs/benefit system and incorporate it into measurements of productivity. Existing models such as the World Bank and Japanese examples of "well-being index" should be examined critically to see if they meet Canadian needs.
- Identify the true value of Canada's natural resources.

Objective

To improve accessibility of environmental information to Canadians for their daily decision making.

Action

- Develop and promote a "national environmental library (NEL)" that would improve accessibility and dissemination of environmental information as well as national, provincial, regional and local environmental databases. The NEL should gather environmental information and use existing library systems for its delivery. Accessibility to NEL could occur through use of "1-800" numbers or through regional libraries, computer systems and ALEX-type telephone systems for access to any database. The NEL could provide an information referral service to sources of information from governmental departments, non-governmental organizations, industry, etc. The referral service could be accessed through the telephone and computer. The NEL should be advertised through the broadcast and print media, regional libraries, posters in public places, phone books and telephone mailings.
- Produce an environmental information guide that identifies appropriate environmental actions and existing resources in that area, including information on all federal and provincial government environmental programs; "how-to" environmental information; environmental options; information on hazardous products; compliance standards; environmental culprits; Canadian experiences on waste management; strategies in handling domestic and hazardous wastes and waste reduction; achievement records on toxic wastes; ozone depletion; water conservation practices; and health and safety food ratings.
- Establish a clearing house, staffed by knowledgeable persons, to facilitate the transfer of environmental information.
- Release all publicly financed environmental data to the public.
- Encourage manufacturers of appliances to include life-cycle costs on their appliances, right beside the price tag. Package manufacturers should provide recycling information on the package.
- Encourage industry to provide more information on corporate environmental practices.
- Develop or strenghten legislation on the right to access information.

Objective

To communicate environmental information more effectively.

Action

- Establish and market a "success stories directory," in partnership with business, that would include such information as examples of the declines of pollutants, recycling initiatives and grass roots campaigns, and successful forestry practices. This would be a positive reinforcement of environmental successes.

> **It is also important in this respect to plot trends in the environment so that we know where improvements have been and are being made and where deterioration is taking place.**
>
> ***Canadian Steel Environmental Association***

- Establish "critical issue working teams" to gather information on environmental successes according to specific issues, identify required research and develop strategies for environmental sustainability.

- Use existing channels, or establish new environmental channels to communicate environmental issues, events, and information. In print media, an "eco-clip" (detailing ecological facts, for example, estimates of CO_2 emissions for the last 24 hours, fossil fuel consumption, species lost, chlorofluorocarbons [CFCs] released and garbage produced) should be printed on a regular basis.

- Use an environmentally informed media to transfer environmental information to all parties.

- Train scientists to communicate complex issues in a clear and understandable way.

- Communicate environmental information in simple terms in French and English.

- Improve mechanisms to market and distribute environmental publications.

- Sponsor an annual national conference for stakeholders on the state of the environment and on the implementation of ***The Green Plan.***

- Establish information networks worldwide and partnerships with the provinces and territories, and with municipal and local levels.

- Encourage and foster, at all levels, training programs on environmental awareness. These programs should involve youth to assist in environmental rehabilitation at local levels; introduce environmental ethics in all programs; and develop outreach programs to promote natural resources stewardship.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Develop a set of standard indicators that will provide a representative profile of the state of the environment and will chart progress towards sustainable development.

2. Continue to work with the United Nations and other international organizations in the development of a common approach to satellite accounts and a measure of environmentally sustainable economic growth.

3. Implement a pilot project to develop a "well-being" or quality-of-life index incorporating factors such as environmental cleanliness, pollution-induced environmental risk and availability of quality wildlife and wilderness experiences.

4. Establish a national environmental library to provide better public access to key information on the state of the environment.

5. Create a "Canadian network for integrated environmental monitoring" to measure the state of ecosystems and their changes due to the influence of both human activities and natural phenomena.

6. Augment the current detailed state-of-the-environment reporting activity (published every five years) with less detailed and more frequent reporting. Possible examples include: an annual outlook and policy statement, fact sheets and electronic media reports.

7. Expand the Northern Science Institute to provide more technical and scientific information on Arctic ecosystems that can be used as a basis for legislation.

8. Support information programs promoting greater public awareness about the environmental and health impact and risks of toxic substances, their proper use and disposal and the availability of alternatives.

9. Establish a multi-stakeholder, independent agency to standardize, co-ordinate and audit state-of-the-environment reporting by all governments — federal, provincial, territorial and municipal.

Better information leads to better decision making. The pulp and paper industry has been encouraging government agencies to take the lead in establishing common data and information bases. The industry wants to be involved in developing these bases and in contributing information.

Canadian Pulp and Paper Association

10. Co-ordinate and contribute to the formation of a multi-stakeholder body to compile baseline data on Canada's ecosystems.

11. Increase monitoring programs on water and air quality, forest management practices, changing land-use patterns in agriculture, and the health of the fisheries.

12. Develop a series of environmental information guides covering a broad range of subjects including hazardous products and alternatives, waste minimization strategies, compliance standards, water conservation strategies, food safety ratings, lifestyle options, environmental programs available through all levels of government, and global environmental problems.

13. Establish an "environmental clearing house" to facilitate the transfer of environmental information.

14. Encourage appliance manufacturers to affix stickers providing life-cycle costs on their products, packaging manufacturers to provide recycling information on their products, and utilities to provide conservation information with every bill.

15. Develop and publicize an environmental "success stories directory" in partnership with other governments and business to encourage Canadians to change their practices in favour of the environment.

16. Establish a "media information program" in order to ensure that Canada's media are adequately informed on environmental subjects.

17. Improve public access to government environmental information through strengthened legislation.

18. Upgrade the federal government's capacity to deliver environmental information, including state of the environment reporting, in a timely and effective manner.

Also see suggestions cited in "Better Education."

Better Education

Better education was identified in the Government's consultation document, *A Framework for Discussion on the Environment*, as one of five essential ingredients for improving environmental decision-making at all levels of society. The Government's objective is to turn awareness into action by the creation of an environmentally literate and trained population.

Recognizing that there are many opportunities to improve environmental literacy, the Government will work with the provinces to establish priorities for action. In the consultation document, the Government asked Canadians for their views on the best way of co-ordinating such an exercise. It also noted that communities, non-governmental organizations and the private sector could play an important role and suggested that initiatives such as the federal Environmental Partners' Fund could be used to facilitate co-operative actions among these sectors.

What Participants Discussed

According to the participants in the consultation process, education is a vehicle "par excellence" for altering our values and modifying our lifestyles to create an environmentally sound Canada. As far as they are concerned, educating children, politicians, the business community and the public is the key to changing attitudes and perceptions towards the environment, as well as to developing an environmental ethic. They want to see environmental education as one of the main objectives of the federal government.

Participants viewed the current education system and existing environmental programs as insufficient for preparing the next generation to respond to future environmental issues. They recognize that all levels of government and industry have a responsibility for improving environmental literacy in the country. They encouraged the federal government to work in partnership with provinces and other stakeholders to develop and implement a national strategy for environmental education.

They agreed that environmental studies should be included as a formal component of school curriculums at all levels, from kindergarten to universities, giving particular consideration to the science component. Such curriculums should be developed in concert with all stakeholders. No consensus, however, was reached on the mechanisms required to develop the core elements of such a program, or what it would include and when it would be done.

In addition, participants had concerns about the limited number of programs that enhance environmental awareness, as well as the limited funds with which organizations are called upon to develop and deliver environmental education programs. Many organizations felt that the federal government should be increasing funding and looking at new ways to deliver environmental education. Many participants noted the importance of advertising and marketing of environmental information as a way to educate the public.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To develop and implement a national environmental education strategy involving all stakeholders.

Action

- Conduct and assess current environment curriculums across Canada with due consideration to provincial, regional and cultural differences. This could be undertaken by the Science Council of Canada, the Canadian Council of Ministers of the Environment or the Conference of Health Ministers.
- Identify environmental education needs and ensure that the policy specifically addresses the development and implementation of core programs, curriculums, and guidelines for environmental education.
- Involve all stakeholders in education strategy development (provinces, territories, industry, academia and others).
- Examine mechanisms to implement the strategy ranging from the creation of an "environment education round table" and a "national advisory group on environmental education," to a "working group" under the Canadian Council of Ministers of the Environment (CCME).

- Develop a set of conceptual standards for measuring effectiveness of environmental education.

Objective

To improve the formal environmental training and education system.

Action

- Establish regional "centres of excellence" in partnership with all stakeholders, whose aim will be to provide environmental education and training to all professions (including medical, legal, engineering and blue collar workers).

- Encourage provincial governments to establish holistic approaches to education, and recognize innovative environmental education programs and practices by using a multi-curriculum approach that includes mandatory environmental studies programs at all levels of education.

- Develop curriculums, program guidelines and basic science courses for all academic levels to increase scientific literacy, because so much is expected from scientists in resolving environmental threats and managing natural resources.

- Introduce environmental ethics into all programs at local and university level.

- Emphasize ecology and ecological principles and interrelationships in school curriculums.

- Establish a "national advisory council on environmental education" responsible for co-ordinating an annual national conference on environmental education in partnership with all stakeholders to encourage ongoing discussion on improving environmental education.

- Encourage universities to add environment to the curriculum of their schools of business and journalism. For example, support the development of the Institute for Environmental Journalism (University of Western Ontario) and encourage the training of those in professional communication to be objective in the presentation of the information.

- Encourage agricultural colleges to expand programs based on the concept of environmentally sustainable agriculture.

- Encourage provinces to enhance training on environmental issues for all teachers from kindergarten through university by establishing a "summer institute for environmental educators."

- Develop and implement a strategy requiring the staff of federal government agencies and politicians to take environmental education courses.

> **We have to first be aware of and understand our impact on the environment before we can change our behaviour.**
>
> *Trans Alta Utilities Corporation*
> *Calgary, Alberta*

- Support the teaching of native history, traditions and culture to promote and better understand the aboriginal relationships between natives and the environment.

- Promote research and development of educational materials, curriculums, and environmental education methods through control of transfer payments.

- Expand existing educational programs, such as Project Wild, and support educational initiatives in sustainable development through organizations such as the Canadian Environmental Education Association and the National Round Table on the Environment and the Economy.

Objective

To improve the informal environmental education system.

Action

- Establish an environmental action program, similar to ParticipACTION, to change social attitudes and behaviour, encourage the creation of an environmental culture, and improve environmental literacy. Consider an arms-length corporation or a multi-sector stakeholder group to deliver this program.

We need to have a strong environmental program in place in our schools that emphasizes that the choices that we make in our lives affect our environment. We need to teach our children, from the earliest age, that the choices as individuals and our influence as individuals, is important.

Elizabeth Bustard
St. Andrew's United Church
Matheson, Ontario

- Develop adult and public environmental education programs for professionals, decision-makers, managers, politicians, media and the general public in partnership with all stakeholders. Programs should involve discussions on key environmental issues, such as waste reduction, energy choices, impact of environmental emergencies, agricultural activities, water conservation, recycling and composting. This would encourage greater understanding and promote ways in which citizens can contribute.

- Develop a public education program on environmental legislation and regulations, compliance and enforcement.

- Promote the concept of wildlife education by reopening or reinstating Canadian Wildlife Service educational and interpretive program centres such as the Webb Centre in Saskatchewan. Emphasis on interpretation centres in urban areas is required.

- Develop outdoor education programs and promote environmental rediscovery programs that aim at learning the importance of protected areas, natural processes, natural parks and environmental integrity.

- Develop local environmental employment opportunities for young Canadians and support environmental leadership training programs for community groups at youth camps, such as Katimavik, Green Cross and Environment Youth Corps.

Objective

To provide new or additional funding for all environmental education programs at all levels.

Action

- Expand the Environmental Partners' Fund to include education projects.

- Sponsor scholarships and fellowships in environmental education and research.

- Using a partnership approach for universities, increase funding to develop programs such as environmental medicine, environmental engineering and environmental planning.

- Fund environmental non-governmental organizations (NGOs) to encourage them to promote environmental education.

- Encourage and support the Canadian Committee on Man and the Biosphere that is currently reviewing environmental education.

- Fund community-based, short-term environmental education projects such as the Healthy Communities Project.

- Fund and encourage cultural activities with an environmental focus.

- Shift the allocation of funds from the Secretary of State Grants Program towards more support for environmental programs.

- Increase funding for Environment Week and make it a national environmental and cultural festival.

- Give additional resources to cable TV to address environmental issues.

Objective

To develop innovative marketing and advertising mechanisms to deliver environmental education targeted at all groups.

Action

- Encourage the Canadian Broadcasting Corporation, the National Film Board and the Canadian Radio-television and Telecommunications Commission to enhance environmental education by:
  - televising periodic debates on environmental issues, such as environmentally safe products, toxic products and risks;
  - developing advertising campaigns to increase consumer awareness of environmentally friendly products;
  - establishing a "green channel" to discuss environmental and human-health issues;
  - featuring "do it yourself" programs detailing information about environmental practices at home.

In partnership with other stakeholders, establish a broad-based speakers' bureau to speak on various environmental issues to schools, service clubs and other audiences.

- Institute a travelling road show to promote environmental education.

- Promote environmental success stories about such topics as new environmental technology, natural resource management techniques, energy conservation measures and sound industrial processes.

- Create a daily or weekly "eco-clip" briefly explaining relevant ecological facts in one or two lines.

- Initiate a periodic (biannual) "environmental report card" that could be used to highlight progress made on environmental issues.

- Use advertising space of bus lines or "greenbuses" to inform the public of ecological concerns, and show that public transportation is more environmentally friendly than transportation in personal automobiles.

- Develop, assemble and finance a consumer environmental information package for distribution to municipalities.

> **There is no question that education in our schools must aim to improve attitudes towards the environment and that this has to be legislated as compulsory for early graders.**
>
> *J.R. Orlando*
> *Camp Hill Medical Centre*
> *Halifax, Nova Scotia*

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Establish an environmental citizenship program, including a public awareness component similar to ParticipACTION, to promote more environmentally sensitive behaviour.

2. Through the Canadian Council of Ministers of the Environment and the Council of Ministers of Education, establish a multi-stakeholder task force with a mandate to develop, for implementation in 1992, an environmental education action plan for Canadian schools, colleges and universities.

3. In co-operation with interested trade and professional associations, develop and offer courses in environmental training to federal government administrators.

4. Establish a "National Advisory Council on Environmental Education" that would work with all stakeholders to co-ordinate an annual national conference on environmental education.

5. Encourage environmental awareness in youth by supporting summer employment in environment-related jobs, funding youth exchange programs, and participation in conferences.

6. Expand the Environmental Partners Fund to cover educational projects.

7. Enhance the Environmental Choice Program for the identification and labelling of environmentally friendly products.

8. Expand the environmental interpretation and education programs at national parks and historic sites.

9. Enhance Canadian Wildlife Service educational and interpretive programs and centres, with particular emphasis on urban areas.

10. Establish a speakers' bureau in co-operation with other stakeholders. The bureau would provide visiting speakers to schools, service clubs, and other audiences to discuss various environmental issues.

11. Promote and make available environmental success stories about such topics as new environmental technology, natural resource management techniques, energy conservation measures and sound industrial processes.

12. Initiate a biannual environment "report card" that would highlight progress made on environmental issues.

13. Develop and fund an environmental awareness campaign for television and radio.

14. Establish an Environmental Education Information Centre which would identify, organize and provide access to information relating to environmental education programs, activities and materials.

Also see suggestions cited in "Better Information."

Legislation, Regulation and Enforcement

Effective and vigorously enforced laws were described in the Government's consultation document, *A Framework for Discussion on the Environment*, as one of five essential inputs to sound environmental decision making. Laws set the rules for access to, and use of, our environmental resources. Despite important progress, the Government noted that legislative gaps remained and that there were growing public concerns about the adequacy and consistency of enforcement.

The Government also committed to defining, with the provinces, the distribution of roles and responsibilities under the *Canadian Environmental Protection Act (CEPA)*. The Government noted that a co-operative federal/provincial, nation-wide training program for enforcement officers was being considered to promote more consistent enforcement.

The Government promised to strengthen enforcement capabilities and asked Canadians for their views on whether emphasis should be given to increased inspections and legal actions, or an expansion of the Government's role as an advisor on regulatory requirements. Given that some Canadians are concerned about the process for developing regulations, the Government asked them to consider ways to clarify and streamline the regulatory process.

The Government's specific legislative commitments were:

- Legislation to strengthen and clarify the application of the federal Environmental Assessment and Review Process (EARP);
- A systematic review of federal laws and regulations to determine their impacts on the environment and recommend modifications as necessary; and
- National regulations under the *Canadian Environmental Protection Act* for major Canadian industries based on assessment of substances under CEPA's Priority Substances List.

I firmly believe that the Government should focus on making environmental laws tougher and more effective, and enforcement of these laws a priority.

D. Ireland
Prince George, British Columbia

Finally, Canadians were asked to comment on several proposed legislative and regulatory initiatives: a Wild Animal and Plant Protection Act; a Drinking Water Safety Act; a Canada Oceans Act; regulations for packaging and recycling; biotechnology products and by-products, elimination of chlorofluorocarbons (CFCs); and California emission standards for 1994 model year cars.

Legislative reform of EARP was introduced on June 18, 1990 following public consultations. The legislation entrenches the Government's obligation to integrate environmental considerations into its project planning and implementation processes.

What Participants Discussed

Many participants were appalled at the poor record of enforcement of federal environmental legislation. To them, it demonstrated a lack of proven commitment by the federal government to protect the environment and human health. They stressed stronger and more effective enforcement, backed up by greater resources assigned to this activity, but some also mentioned a place for the compliance approach involving provision of information and technical assistance to regulatees. They noted that there were insufficient funds and too few people assigned to enforcement of environmental statutes and accompanying regulations. Individuals or environmental, native and other non-government groups unrelated to industry all were in favour of strong, effective enforcement. Industry and industrial associations emphasized consensus, co-operation, consultation and "working with" companies to achieve compliance, rather than the federal government's carrying out inspections and initiating legal action when violations are detected.

In the same way, many participants who did not represent industry wanted environmental audits made compulsory for both industry and governments, while industry and industrial associations countered that the environmental audit would then cease to be an effective management tool. Industries were concerned that the audit would focus only on compliance with regulated standards, and would not frankly assess other points of risk or weakness in manufacturing or other processes. Industries were also concerned about staying competitive in the domestic and global markets. However, many participants stressed that prevention "pays off" both economically and in terms of effective protection of the environment.

Participants wanted clear and enforced regulations, rather than guidelines, codes of practice or voluntary standards. They wanted the process by which regulations are developed to be streamlined. Some were concerned that industry might use proposed economic instruments such as pollution permits and tradeable emission rights to stay within the limits specified in the permits, and to avoid correcting environmental problems. They believed that economic instruments should complement but not replace environmental regulations.

Participants also felt that the federal government has not done an effective job of communicating to the public information about existing federal environmental legislation and available opportunities for participation in the development of regulations. Again and again, participants insisted that it be mandatory that the public be consulted from the earliest stages of legislation and regulation development.

Some participants were also disappointed to note that the "proposal" to eliminate Canadian production and importation of chlorofluorocarbons (CFCs) and halons by 1999, the proposed implementation of a program to protect wildlife populations and their habitat, the "proposed" Wild Animal and Plant Protection Act, which are mentioned in the document, *Framework for Discussion on the Environment*, are not new.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives. A number of additional recommendations regarding legislation and its administration appear under topics such as "Toxic Substances," "Waste Management," and "Environmental Emergencies."

Objective

To enact new legislation and regulations.

> **It's time to stop talking and get down to some action to clean up the environment. Push through some strong legislation and the people will back you up.**
>
> *J. Prem, Manitoba*

Action

- Develop a Canadian Environmental Bill of Rights including:
  - the right to a clean, healthy natural environment;
  - the right to be informed about discharges into and onto common property;
  - the right to full and fair environmental assessment, with the right for individuals to initiate the environmental assessment if the appropriate authorities do not carry it out, and with the right to seek a judicial review of the assessment;
  - the right for individuals to initiate prosecution for environmental offences;
  - the right for individuals to bring class actions;
  - a commission, like the Canadian Human Rights Commission, to ensure adherence to the Canadian Environmental Bill of Rights.

- Urge the United Nations to create an international environmental charter that would provide, at least with moral persuasion, the same rights as a Canadian Environmental Bill of Rights.

Objective

To develop effective legislation to protect air and water.

Action

- Develop air and water legislation that is based on adequate scientific data, with comprehensive monitoring and enforcement.

- Develop and implement, in 1990, a Canadian Safe Drinking Water Act.

- Create a clear legislative base, including regulations to direct water and watershed management that are based on best available technology.

- Prohibit international import and export of water through inter-basin diversions.

- Develop federal regulations for international and interprovincial waters and create a mechanism for resolution of interprovincial water disputes.

- Ratify the Law of the Sea before 1993.

- Prohibit, under the *Fisheries Act*, agricultural and forest development along water courses to protect the fishery resource.

- Improve mining waste discharge requirements in the Metal Mining Liquid Effluent Regulations, under the *Fisheries Act*.

- Fulfil the federal legislative responsibility, under the *Fisheries Act*, to protect Canada's fisheries and to prohibit or limit alteration of Canada's waterways, and take measures to limit the growth of cities and protect salmon-bearing rivers.

- Enact under the *Motor Vehicle Safety Act*, by 1994, requirements for stricter controls of emissions of new motor vehicles (California emission standards).

- Develop air-quality regulations for pollutants such as sulphur dioxide and arsenic trioxide.

- Ensure that jurisdictional boundaries are based on ecological parameters, rather than political divisions. For example, in the area of fisheries, arguments for extended jurisdiction over marine waters should be based on environmental imperative and consideration for fisheries management and pollution control.

Objective

To create legislation that ensures effective environmental assessments and reviews.

Action

- Create a strong and effective Canadian Environmental Assessment Review Act, that provides for mandatory implementation of assessment decisions, not just recommendations.

- Allow no exemption for federal departments, agencies, boards, commissions and federal Crown corporations from the requirement to conduct environmental impact assessments under the *Canadian Environmental Assessment Review Act*.

Objective

To protect wildlife and plants with legislation.

Action

- Create specific legislation to protect flora and fauna, including a federal Endangered Species Act and a federal Ecological Reserves Act, and legislation to ensure the maintenance of bio-diversity.

Objective

To address gaps in the protection system by developing legislation to control specific problems.

> **...A combination consisting of a rigorous enforcement program, stiffer penalties and criminal sanctions should be complemented by an increased effort to assist corporate polluters to meet regulatory standards.**
>
> *Canadian Wildlife Federation*

Action

- Enact legislation requiring that, before new materials can be introduced to the marketplace, the producer must show that there are viable recycling systems that could be used to recycle the material.

- Make environmental audits compulsory, and publicly available, for federal departments, boards, agencies and federal Crown corporations.

- Create legislation to protect cultural and historical resources.

- Create a Territorial Environmental Protection Act to be implemented in the Northwest Territories.

- Legislate that 40 percent of all products be recycled.

- Protect environmental "whistleblowers" (those who report suspected offences) in government and in the private sector against harassment, firing or involuntary transfers.

- Include "good Samaritan" provisions in relevant legislation to encourage quick and effective emergency response by qualified individuals.

Objective

To review and strengthen existing legislation and regulations.

Action

- Review all relevant existing federal legislation and policies to identify and eradicate, by 1993, all regulations that impede or are contrary to protection of the environment.

- Clarify which level of government has jurisdiction over Canada's environmental matters under the *Constitution Act of 1982*, and clarify areas of responsibility that are shared between the federal and provincial, and federal and territorial governments.

- Incorporate the principle of environmental protection in the *Charter of Rights and Freedoms*.

- Recognize and enshrine in the Criminal Code the notion of "crimes against the environment."

- Create two types of penalties: those that are punitive for offenses resulting in damage; and others for restoration or reclamation of damaged areas. Require, by 1990, that offenders pay the full costs of restoration following pollution incidents for which they are convicted.

- Create national regulations for packaging and for dangerous substances.

- Reduce gaps in regulations pertaining to the release of contaminants and the requirement for adequate contingency planning.

Objective

To adopt recommended principles to improve development of new legislation and amendment of existing legislation.

Action

- Prohibit "escape clauses" or other statutory means of avoiding compliance with environmental laws.

- Ensure that regulations are the proper instrument to achieve protection of the environment and human health, before they are enacted, and ensure that they are enforceable.

- Base discharge regulations on the ecological capacity of the receiving environment.

- Standardize environmental statutes across the country, in co-operation with provinces and territories.

- Avoid ambiguity, overlap and duplication, and delegate the authority to implement and enforce national regulations to the most appropriate level of government — federal, provincial, territorial or municipal.

- Establish a centralized information service that will answer questions of jurisdictional responsibility and direct enquiries and complaints to the appropriate federal or provincial department.

- Balance the need to protect the environment with the need to allow Canadian industry to remain viable and competitive both domestically and internationally.

Objective

To improve enforcement.

Action

- Review and increase the penalties and improve enforcement procedures under all federal environmental legislation.

- Develop enforcement and compliance policies for all federal environmental statutes.

- Enforce existing federal environmental statutes, including the *Fisheries Act* and federal wildlife legislation.

- Ensure that all federal environmental regulations are being enforced, and do not abdicate enforcement responsibilities to the provinces.
- Allocate more people and funds for enforcement of existing laws and regulations.
- Require the federal, provincial and territorial governments to obey their own laws.
- Have strong centralized control to ensure development of uniform standards and uniform enforcement of environmental regulations across Canada.
- Have inspectors conduct inspections without advance warning.
- Create independent monitoring units.
- Create an international charter to prevent companies leaving the country to avoid compliance with environmental statutes.
- Establish for Canada's North a commitment to strengthen and integrate enforcement of environmental legislation.
- Prosecute polluters, and hold directors and corporate officers responsible and accountable for their companies' compliance with the law.
- Use consistently two types of monitoring: self-monitoring by regulatees through mandatory reporting under regulations; and monitoring by the federal government to audit and supplement self-monitoring by regulatees.
- Encourage provinces and territories to put in place, by 1993, mandatory inspection for gasoline-powered vehicles at the time of licence plate renewal.

Objective

To improve information dissemination.

Action

- Educate regulatees and other Canadians about enforcement policies for federal environmental statutes.
- Publicize regulatory offences and penalties, and the names of regulated companies or individuals who perform better than the standards set in the regulations.
- Uphold the principle of the public's involvement in the development of legislation and regulations, to ensure that consultation takes place with affected parties and the public.
- Establish procedures of mediation, involving all stakeholders, to set reasonable timetables to bring existing operations into compliance with regulations.
- Explain environmental legislation to those who are subject to it.
- Encourage ordinary Canadians to act as a force of moral persuasion to get industry and others to comply with the law.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

> **Today, the complexity of the issues, the alternative economic and technological factors and overlapping jurisdiction combine to make it increasingly difficult to keep the regulatory structure simple, understandable and enforceable.**
>
> ***Canadian Petroleum Products Institute***

1. Enact a Canada Environment Act to provide an umbrella for federal environmental legislation.

2. Consider an environmental Bill of Rights.

3. Develop and implement by 1991, a Drinking Water Safety Act, setting national standards for drinking water.

4. Through legislative action, prohibit the import and export of water through inter-basin diversions.

5. Create legislation to protect flora and fauna, including a federal Endangered Species Act and a federal Ecological Reserves Act.

6. Create legislated standards for environmental audits and help to develop a system for accrediting environmental auditors.

7. Enact a National Energy Efficiency Act to set minimum efficiency standards for appliances, motors, equipment, and other products.

8. Through a Canada Oceans Act, enhance the legislative basis for adopting several key elements of the Law of the Sea Convention, including provisions to create a 200-mile "exclusive economic zone," assert Canada's interests in migratory species and stocks straddling the 200-mile limit, provide for the creation of marine protected areas and strengthen the legislative basis for ocean science.

9. Pass a Wild Animal and Plant Protection Act to control the illegal trafficking of wildlife into and out of Canada.

10. By 1995, review all federal laws and regulations to determine their impacts on the environment. Make modifications necessary to ensure their consistency with environmental protection.

11. By 1994, enact under the *Motor Vehicle Safety Act*, requirements for stricter controls of emissions of new motor vehicles (California emission standards).

12. Strengthen the mining waste discharge requirements in the Metal Mining Liquid Effluent Regulations, under the *Fisheries Act*.

13. Establish a centralized information service that will direct legal enquiries and complaints to the appropriate federal or provincial department.

14. Develop enforcement and compliance policies for all federal environmental statutes.

15. Allocate more financial and human resources to enforcement of federal environmental statutes, including expansion and strengthening of enforcement and investigation forces, and laboratory and legal support services.

16. Publicize regulatory offenses and penalties, and the names of regulated companies or individuals who perform better than the standards set in the regulations.

17. Establish procedures for mediation, involving all stakeholders, to set schedules to bring existing operations into compliance with regulations over a reasonable time period.

18. Establish a national training program for environmental enforcement officers.

19. Strengthen regulations under the *Fisheries Act* and CEPA to control emissions of toxic substances into the environment.

20. Strengthen the *Migratory Birds Convention Act* by establishing regulations to create new migratory bird sanctuaries and increase penalties for violations.

21. Pass new regulations under the *Canada Wildlife Act* to increase penalties for violations and establish new wildlife areas.

22. Introduce a Canada Offshore Minerals Management Act.

23. Establish standards and regulations to reduce packaging by 50 percent by the year 2000.

24. Develop national standards, policies, codes and regulations for wastes to achieve the 50 percent waste reduction goal.

Economic Instruments

In the consultation document, *A Framework for Discussion on the Environment*, the Government of Canada made a commitment to a policy that balances the use of regulatory controls and economic incentives and disincentives to achieve environmental objectives. Economic instruments, such as pollution taxes and user charges that reflect environmental costs, would encourage decision makers at all levels of society to make informed decisions that would assist in achieving environmental objectives. The use of tradeable permits could allow us to achieve our regulatory goals at lower economic costs.

The consultation document also suggested that further study was required before decisions could be made on the practicality of using economic instruments to address specific environmental problems. The Government proposed to initiate a detailed public discussion of the advantages and disadvantages of economic instruments following the release of ***The Green Plan***.

The Government proposes to launch this process in the spring with the release of a green paper. The paper would assess the practical merits of a broad range of economic instruments, both tax and non-tax, as mechanisms for dealing with environmental problems including global warming, ozone depletion, acid rain, local air quality, waste management and renewable resource management.

What Participants Discussed

Participants shared the objective of developing an appropriate balance of economic and regulatory mechanisms to promote sustainable development, both at home and abroad. They agreed that the selection and application of instruments must be guided by principles that will ensure consistency, minimize duplication and guarantee periodic evaluation, based upon a cost-benefit analysis, which includes environment/health considerations. Stated criteria for these principles could be summed up as: *simple, visible, achievable, acceptable*.

Participants were also generally aware of the complexities associated with selecting economic instruments. They reached common agreement on the effectiveness of economic instruments for achieving environmental goals. However, the balance and mix of mechanisms was often a contentious issue. Most participants discussed economic instruments in the broadest sense.

> **There should be a reasonable balance between regulations, economic incentives and market instruments in working towards these goals (health and environmental benefits.**
>
> ***Dow Chemical Canada Inc.***

They felt that instruments could range from incentives (accelerated tax write-offs, subsidies, "awards") to disincentives (fines, taxes, regulations, sanctions).

It was generally agreed that different problems required distinct solutions, but that overall environmental goals must be consistent with (although not subordinate to) responsible fiscal policy. Partnerships among and between the private and public sectors were considered essential to the effective use of economic instruments. Participants agreed that study and assessment, including pilot projects, are essential to maximizing the benefits of economic mechanisms.

Most participants perceived existing fiscal and tax policy to be at odds with the goals of sustainable development. They felt governments should review and modify programs and policies that are inconsistent with environmental goals. Concurrently, they wanted greater input to the preparation and delivery of policies and programs, which many participants considered to have the potential for serious, though often unintended, adverse environmental impacts.

There was overwhelming agreement that governments must get their houses in order, lead by example and develop better, more responsive and creative solutions to environmental problems through the use of economic instruments.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations.

- Choice of incentives and disincentive must be consistent with the issues to be resolved.

> **We do not support the selective extension of government relief to corporate entities, based upon the company's inability to absorb environmental costs... distorts competitive forces within an industry, rewarding inefficiency rather than positive performance.**
>
> ***Independent Petroleum Association of Canada***

- Co-operative efforts, and study and assessment of a wide range of instruments is required (see list that follows).

- Pilot programs should be launched as part of the assessment process.

- Current tax and pricing systems should be reviewed for consistency with environmental goals.

- Current and future policies and programs to be developed and/or implemented must give environmental considerations equal weight with economic factors. These policies must be implemented in a fiscally and monetarily responsible manner and include "open book" accounting.

- Overall support for a dedicated and accountable "green tax" emerged.

- Taxes, including green taxes, must be structured so as not to seriously disadvantage "have-not" regions or jeopardize international competitiveness.

- Environmental and economic indicators must be developed, at the local, national and international levels.

- A supplementary environmental accounts system should be developed to reflect true resource costs and full life cycle costs.

- All levels of government should be addressing the use of economic instruments and applying an appropriate mix to their individual areas of responsibility.

Participants of several workshops felt that the following economic instruments should be examined as potentially useful tools for achieving environmental goals:

- Excise tax
- Tax-free bonds
- Subsidies
- Sanctions
- Aid (Third World)
- Fines
- Profit
- Indirect subsidy
- Sales taxes
- Liability insurance
- Full pricing
- Licences
- User fees/pay for use
- Standards
- Earmarking government revenues
- Emission charges
- Development rights
- Land/resource tenure
- Revenue neutral
- Advertising
- Conditional international development loans
- Tariffs
- Directed investment
- Technology
- Tax credits
- Grants
- Tax exemptions
- Low interest loans
- Credit rating
- Accelerated depreciation
- Labour market adjustments
- Tradeable/auctionable permits
- Lotteries
- Regulations
- Consumer value
- Deposit/refund systems
- Labelling
- Leasable permits
- Performance bonds
- Royalties
- Pollution compensation payments
- Conditional transfer payments
- Conditional sale of technology
- Environmental trade sanctions/restrictions
- Information/education
- International agreements
- Research

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Release a green paper on economic instruments, including tax measures, and initiate multi-stakeholder consultations in the spring.

2. Implement pilot programs as part of the process to assess the merits of specific economic instruments.

3. Support a research program on economic instruments outside government. Its purpose would be to expedite the implementation of economic instruments by encouraging practically oriented work.

4. Develop satellite environmental national accounts.

5. Make use of innovative economic instruments to fund ***The Green Plan***.

> **Incentives should be provided to those organizations who are producing and promoting environmentally friendly products... tax benefits, "special awards"...**
>
> **Tri-Church Outreach Committee**

Changing Decision-making Processes

The need to change decision-making processes at all levels of society was identified in the consultation document, ***A Framework for Discussion on the Environment***, as a central element of ***The Green Plan***. Existing private-sector and government structures, institutions and processes must be changed to ensure that environmental considerations are formally recognized as essential decision-making criteria.

In the document, the Government outlined three specific commitments to achieve a better integration of environmental and economic considerations within in its own decision making. These commitments were:

1. New legislation to strengthen and clarify the application of the federal Environmental Assessment and Review Process (EARP);

2. A systematic review of federal policies, laws and regulations to determine their effects on the environment and recommend modifications as necessary; and

3. Adoption of a code of environmental stewardship, including specific goals and operating procedures.

The Government also asked Canadians whether both industry and government should be required by law to conduct environmental audits and make the results available to the public.

The promised reform of EARP was introduced on June 18, 1990, following public consultations. New legislation entrenches the Government's obligation to integrate environmental considerations into its project planning and implementation processes. To complement the legislation, the Government also introduced measures to ensure that all proposed policy initiatives undergo an environmental assessment.

What Participants Discussed

Participants gave the Government strong messages about the need to improve the way we make decisions about the environment. They said that we need a better foundation for decision making, and that our decision-making processes must be more open and give primacy to the environment.

The recommendations of the participants can be summarized under four headings:

I Changing the way decisions are made - The public must be involved in decision making, beginning with the conceptual stage and continuing throughout the decision-making process. Government structures must be modified and improved to support better decision-making processes. While the ultimate decision-making authority must remain with the government, the consensus was that the decision-making process must include broad multi-stakeholder involvement, beginning in the early conceptual stage and continuing throughout the process.

II Government leadership - Government should be showing leadership in two ways: through its own exemplary behaviour and decision making, and by encouraging leadership and environmentally sound behaviour in others. They also expect the federal government to encourage environmentally responsible behaviour in others.

III Accountability for environmental decisions - Both government and industry should be more visibly accountable to Canadians for the way in which they affect the environment.

IV Environmental Assessment Review Process - The introduction of the Environment Assessment Review Process (EARP) legislation during the consultation process meant that some comments were made before people had had an opportunity to review the draft legislation.

There was concern that the EARP legislation should be enacted as soon as possible, and that its principles be applied even before enactment. Many people commented on the recent court rulings and urged that the federal government abide by the decisions. Participants told us that EARP should apply to:

- all Cabinet policies;
- all federal government programs, projects and policies;
- projects by Crown corporations;
- projects funded by the Government of Canada outside of Canada, such as projects funded by Canadian International Development Agency, World Bank or the Export Development Corporation;
- export and import permits;
- any project that could have an impact on water courses or water bodies;

- the federal *Fisheries Act;*
- military construction projects and their subsequent operations, including the North Warning System and low-flying aircraft;
- all major forestry cutting plans (under either federal or provincial process, but subject to national standards);
- game ranching;
- ancillary construction works such as access roads, mitigation works, river bed channelization, etc.;
- federal/provincial economic development agreements.

Specific requests included the halting of all development on the Oldman River and James Bay II until a full EARP with public hearings has been completed. Many participants also felt that there should be discussion with native communities about adopting EARP on native lands.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

I Changing the way decisions are made:

Objective

To develop clearly defined decision-making processes so that stakeholders know in advance how they can contribute.

Action

- By 1991, develop a consultation process for policy development. This should include:
  - a procedure for setting environmental priorities;
  - a method to identify which projects require complex decision making and planning;
  - clear and consistent procedures for environmental decision making;
  - defined roles for stakeholders from the conceptual stage onwards;
  - suitable time frames (five years may be a long time for government but it is inadequate to show commitment to environment);
  - an improved method for making Canadians aware of the timing and location of policy discussions; and
  - consultation processes that predict and proactively address future environmental issues.

- Ensure consultation is an ongoing process, complete with monitoring of the quantity and quality of the consultations.

- Support commitments by providing human and financial resources.

- Provide government funds for transitional costs of environmental protection and enhancement, but ongoing costs should be charged to the people who benefit from the improvements.

Objective

To improve information and communication about decision-making processes.

Action

- Encourage participants in the decision-making process to become informed about issues and options before taking formal positions.

- Educate Canadians, both groups and individuals, about decision-making processes.

- Provide good baseline data to which all stakeholders have equal access.

- Facilitate effective communications among stakeholders by:
  - establishing computer networks to increase communication within government and among interested citizens;
  - creating multi-stakeholder environmental committees;

> **We must weigh the environmental costs of all development before proceeding. The time has come to err on the side of caution when dealing with environmental issues.**
>
> ***S.A. Gelfand, Calgary, Alberta***

  - facilitating public participation at round tables;
  - encouraging and funding teleconferences and multi-sector meetings to foster greater understanding between stakeholder groups.

Objective

To encourage meaningful involvement.

Action

- Involve stakeholders early in the decision-making process.

- Encourage all appropriate stakeholders to become involved, including regional and cultural representatives as appropriate. Some consultation processes will involve representatives of groups, others may be better served by individual participants.

- Enable all stakeholders to participate equally in the process, by providing intervener funding, including provision for hiring professional expertise.

- Encourage and support local involvement in decision making.

- Provide resources for research and monitoring at the local level.

- Consider transferring activities such as data collection, education and enforcement to local levels, where they may be performed more effectively.

- Take into account the longer (five-year) cycle for business decisions, as compared to the three- to four-year cycle of governments.

> **The "Eco-techno-fix" philosophy that characterizes the present *Green Plan* document should be abandoned and a move should be made towards a better incorporation of public involvement in the decision-making process.**
>
> ***St. John's Consultation Session***

- Provide stakeholders with feedback about how and why decisions are made, and about how their input affected the decisions. This information should be included in a follow-up report that outlines the decisions taken, and the basis for those decisions.

Objective

To clarify inter-governmental jurisdictions.

Action

- Co-ordinate environmental authorities and responsibilities to avoid costly, time-consuming contradictions and duplication (as per the commitment made by the Canadian Council of Ministers of the Environment). This could be achieved through the use of a system of "equivalences." Better federal/provincial co-ordination would avoid the proliferation of environmental regulatory bodies, which ultimately impede the process.

- Develop complementary environmental regulations and policies for the federal and provincial governments. This would clarify areas of shared responsibility and address transboundary issues.
  - By December 1991, the federal government should conclude agreements with the provinces and have an implementation plan ready for public review. The Canadian Council of Ministers of the Environment (CCME) could lead this process.
  - Where there is need for clarification, CCME could be asked to adjudicate. If no agreement can be reached, the Supreme Court could be asked to rule.

- Set, at the federal level, minimal national standards for the environment.

- Consider the Great Lakes Water Quality Agreement and Canada-Ontario Agreement as good models for inter-governmental co-operation.

- Establish one lead agency in each province to oversee environmental regulations.

- Create an environmental mediation mechanism to resolve disputes on environmental matters and resource-use and land-use conflicts.

Objective

To clarify the boundaries of inter-departmental jurisdictions.

Action

- Review all federal legislation, regulations and policies to ensure they support environmental objectives. All departments should be committed to the principle of sustainable development.

- Reorganize the structure of the federal government's departments with environmental jurisdictions. A major barrier is the vertical, multi-jurisdictional organization of the Government, compared with the horizontal nature of environmental issues.
  - The ideal is to have a "one window" approach, so that industry would have only one point of contact with the Government on environmental matters.
  - The National Round Table on Environment and the Economy should be asked to address this reorganization, with multi-stakeholder input. The Round Table should present a recommendation to the first ministers by June 1991.

- Co-ordinate departmental roles to integrate and balance environmental and economic aspects.
  - Give the ultimate authority for environmental matters to one department. Participants recognized, however, that this could create jurisdictional problems and sacrifice necessary partnerships within the Government.
  - Participants felt that the lead agency should be empowered to ensure environmental sensitivity in all policy areas and eliminate incompatibility of programs and policies. Funding for this expanded role could be derived from existing resources within departments concerned.

Objective

To improve communications with the non-governmental sector.

Action

- Establish a grass roots round table to: educate the public on the environment; inform government about grass roots activities and issues; provide input and planning advice at all levels of government and in communities.

- Organize monthly meetings between key ministers, their advisors and environmental non-government representatives to discuss environmental matters.

- To increase understanding, encourage private, round table meetings among government, non-governmental organizations (NGOs), industry and specific groups.

- Support national and international networks for the exchange of environmental information by tapping into and supporting programs such as Man and Biosphere, the United Nations Environment Programme, and the Junior Professional Officer program.

- Improve staff exchange programs among government, industry and NGOs to foster better understanding.

- Expand interchange programs such as "Interchange Canada" to include all levels of government staff on a national and international scale.

II Government leadership:

Objective

To ensure that government conducts its businesses in ways that are environmentally responsible.

Action

- Politicians and civil servants should:
  - use buses and trains instead of cars and planes;
  - encourage car pooling;
  - use recycled paper (non-chlorine bleached), with non-toxic and recyclable ink;
  - make double-sided photocopies;
  - eliminate the use of plastic window envelopes in mailings;
  - practise the four "Rs" (reduce, reuse, recycle, recover);
  - reduce emissions from government buildings;
  - practise organic waste separation;
  - use solar and wind collectors;
  - educate government employees;
  - convert vehicles to alternate fuels;
  - reduce or eliminate junk mail;

  - reduce or eliminate the use of pesticides on federal property, and use integrated pest management techniques.

- Produce a regular report on progress in achieving the above.

- Develop a code of environmental stewardship, perhaps as part of an Environmental Bill of Rights.

- Develop a strategic environmental plan for each department, Crown corporation and Crown agency, including "green" procurement policies; plans to practise the "four Rs" (reduce, reuse, recycle and recover); provisions to meet regulatory requirements; etc. These should be circulated for public scrutiny.

- Develop an integrated process to review all existing legislation, policy and regulation as soon as possible to ensure they support goals of sustainable development.

- Include a section on environmental considerations in every Memorandum to Cabinet, with independent commentary on these sections to be provided to Cabinet by the Federal Environmental Assessment Review Office (FEARO) or another agency.

- Broaden federal environmental policies to include health. For example, expand the mandate of the National Round Table on Environment and the Economy to become the National Round Table on Health, Environment and the Economy.

- Develop professional codes of environmental ethics to assist professions in addressing environmental issues.

- Show international leadership: Use Canada's influence in the Commonwealth and La Francophonie to increase diplomatic efforts for preventing destruction of ecosystems.

- Enter into more international agreements on environmental issues with developed and developing countries.

Objective

To foster awareness and leadership in others.

Action

- Ensure that all public institutions (including schools, hospitals, and municipal buildings) serve as role models in their health and environmental practices.

- Encourage more industries to develop codes of environmental practice. Many industries have successfully used these for a number of years and have found them to be effective.

- Voluntary programs set up by industry should be given support as the most effective mechanism for emergency situations.

- Help businesses to become environmentally friendly.

- Encourage environmental awareness in youth through summer programs related to environment, creating youth round tables, environmental youth corps for clean-ups and emergencies, and funding exchange and conference opportunities.

- Use "grey corps" as guides and counsellors for the youth corps.

- Give awards and public recognition for environmental leadership at the community level.

- Expedite land claims to assist native peoples to help themselves and listen to what the aboriginal people have to teach us.

- Continue transboundary circumpolar co-operation.

- Place more emphasis on individual responsibility: participants cited the public advisory process developing as part of the Remedial Action Plans (RAP) on the Great Lakes as a good example.

- Increase support for community initiated projects, such as the Environmental Partners Fund.

III Accountability for environmental decisions:

Objective

To create an assessor who could perform the role of an environmental guardian.

Action

- Establish an independent assessor with the authority to:
  - review government actions and compliance with regulations;
  - provide general information to the public on environmental matters;
  - report on progress in achieving sustainable development and issue an annual State of Environment Report;
  - provide an independent assessment;
  - arbitrate disputes;
  - publish the results of industry audits and/or a listing of the best or worst companies.

Other, similar suggestions follow:
  - appointing an agency to independently study and report on major issues of environmental concern;
  - appointing an independent judiciary body to review political decisions and advise on environmental issues;
  - founding an environmental version of the Consumers Protection Association; and
  - directing the National Round Table on Environment and the Economy to monitor the implementation of ***The Green Plan*** and prepare an annual report.

- Create legislated federal standards for environmental audits, with a system for accrediting environmental auditors. Facilitate voluntary compliance with these legislated standards, with the power to enforce in the case of non-compliance.

- Ensure that audits are multi-dimensional, including economic, social, cultural and national interests.

Objective

To apply special requirements to audits of government departments and activities.

Action

- Require all government departments to undertake annual environmental audits, and to make the results public.

- Build audit requirements into environmental legislation and regulations.

- Name an assistant deputy minister in each department who is accountable for implementing environmental policy decisions.

Objective

To encourage industry to consider environmental audits of its activities.

Action

- There was mixed response to the issue of compulsory, public audits for industry.

Businesses noted that audits were valuable for their economic and community relations benefits, for helping managers and employees to become more aware of good environmental practices, for highlighting any deficiencies in environmental practice and for providing information to improve environmental stewardship.

Industry strongly rejected the notion of public audits because:
  - fear of legal action might decrease the effectiveness of internal auditing procedures;
  - compulsory auditing would lead to audits that only review compliance with regulations, as opposed to the full scope of operations.

Others strongly supported compulsory, public audits. Benefits would include the ability to make purchase options based on a company's record. As a minimum, the public would like to see compulsory audits for companies doing government business, using government funds or receiving grants or tax concessions.

Environmental activists do not want to participate halfway through the policy process. They feel manipulated; that they are being asked to rubber-stamp something, not develop it. They want to go in at the beginning and help determine the framework.

Ottawa Consultation Session

IV Environmental Assessment Review Process:

Objective

To avoid duplication in environmental assessment activities.

Action

- Co-ordinate environmental assessment between federal and provincial jurisdictions.

- Develop a "one-window" approach, with either the federal or provincial government as the lead agency. Where more than one level of government is involved, the lead government must consult with the others, for example on scope of review and panel members.

- Where both federal and provincial jurisdiction is involved, or where jurisdiction is unclear, there must be advance consultation to determine the lead government. CCME should adjudicate in the case of a dispute.

- Develop national EARP standards, which can be enforced. These standards should be developed with broad public input from all regions and cultures. National standards may help to streamline the process by reducing the need to review every project.

- Facilitate co-operation between smaller jurisdictional units such as municipalities.

Objective

To appoint an independent agency. There was concern about the potential for conflict of interest when the originators of projects conduct their own assessments.

Action

- Create an independent agency, reporting to Parliament, using representatives of the public and private sector. A number of roles were proposed:
  - to monitor compliance and undertake public reviews if compliance was inadequate;
  - to undertake investigations and audits of federal programs and policies;
  - to decide whether assessment should be undertaken in case of appeal;
  - to ensure that fair assessments are made;
  - to have final authority on EARP decision. (The proposed legislation gives final authority to the Minister of the Environment, which many Canadians see as a potential conflict of interest.)

- To provide a more objective assessment, have a neutral agency contract environmental assessments among competing firms, with the cost borne by the project originator.

- By 1991, develop guidelines that clearly identify the criteria for EARP, including:
  - projects to which it should apply;
  - a standard protocol for conducting an environmental assessment;
  - a clear approval and review process; and
  - referral systems.

- Use the principle of a "level playing field" — the same rules must apply to everyone.

- Assign responsibility for the initial decision to conduct an environmental assessment to Environment Canada, with the project originator to have a right of appeal to an independent agency.

- Identify in the regulation the federal authorities that will automatically trigger an environmental assessment (for example, *National Energy Act, Fisheries Act*).

- Require environment assessments at the concept stage of a project.

- Limit the turnaround time for decisions, and set statutory minimum and maximum periods for all stages of the environmental assessment and review process.

> **The Treasure that the Treasury Board manages is the environment upon which the economy is based.**
>
> *Toronto Consultation Session*

- Take an ecological and holistic approach to environmental assessments. EARP should explicitly include the notion of cumulative effects on and the assimilative capacity of the ecosystem.

- Expand the Treasury Board guidelines that specify the cost-benefit analysis component within EARP. The guidelines should include a consideration of the sustainability of resources, and should review discount rates in evaluating investment decisions. There must be easily understood methods of accounting for the depletion of environmental capital.

- Strengthen the health component of the assessment.

- Give the federal government the power to:
  - withhold approval of initiatives until a rigorous EARP has been conducted;
  - cancel a project that fails to meet environmental standards;
  - forbid construction while an environmental assessment is being conducted.

- Use a quasi-judicial process for EARP hearings (a more rigorous process).

- Make federal expertise available throughout the process for both federal and provincial environmental assessments.

- Provide market incentives to encourage the phased reduction of pollution from existing operations. Require state-of-the-art controls over new projects.

- Provide more funding for gathering baseline data. Inadequate data mean poor decisions and no benchmark for comparison.

- Performance bonds should be posted to ensure compliance.

Objective

To increase public involvement in environmental assessments.

Action

- Encourage and facilitate community participation in project development, design and implementation.

- Review the total scope of the process widely in the media before initial scoping sessions.

- Make inventory information available to stakeholders.

- Provide intervener funding for NGOs and individuals, to defray costs. Funding should also be available to hire professional services.

- Make the appeal process highly visible and accessible to stakeholders.

- Ensure a balanced mix of stakeholders, including industries.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Develop and make public a consistent and well-defined process for public consultations for the development of national environmental policies.

2. Assist individuals and groups in becoming more effective participants in consultations through better environmental information and education.

3. Review all federal legislation, regulations and policies to ensure that they are consistent with the principle of sustainable development.

4. Review the existing organization of federal departments and assess its capacity to respond effectively to environmental issues.

5. Establish a national round table at the grass roots level.

6. Support national and international networks for the exchange of environmental information.

7. Develop and implement a code of environmental stewardship to govern the operations of all federal departments and establish specific plans for waste reduction, energy conservation and clean-up.

8. Include a section on environmental considerations in every Memorandum to Cabinet.

9. Encourage environmental awareness in youth by supporting summer employment in environment-related jobs, funding youth exchange programs and participating in conferences.

10. Set up a program to give public recognition for environmental leadership at the community level.

11. Mandate an independent body such as the National Round Table, FEARO, an ombudsman or an environmental auditor general, to monitor and report annually on Canada's overall environmental performance.

12. Create legislated federal standards for environmental audits and help develop a system for accrediting environmental auditors.

13. Require all government departments to conduct annual environmental audits.

In the consultation document, *A Framework for Discussion on the Environment*, greater co-operation and stronger partnerships, both domestically and internationally, were identified as essential elements of ***The Green Plan*** and key to better environmental decision making. The Government emphasized the need for strong international partnerships and continued federal/provincial co-operative actions. It also noted that other partnerships needed to be renewed, a recognition that all Canadians have a responsibility to change their own behaviour and the behaviour of those around them. Governments, business, labour, environmental groups, individuals and communities, Canada's youth and our aboriginal peoples must all work together to develop lasting solutions to our environmental problems.

At the international level, the Government proposed to enhance Canada's support of international actions. Increased funding for international institutions and greater financial and technological aid to developing countries were cited as possible federal initiatives. Domestically, the Government proposed to negotiate administrative agreements on national standards with the provinces and territories. This would reduce uncertainty, avoid duplication and increase the effectiveness of our environmental actions.

In the document, the Government asked Canadians for their views on how to forge more effective partnerships with business, labour and environmental groups. It recognized that actions would be needed to encourage individuals and communities to act, and suggested that initiatives similar to the ParticipACTION program could be used to foster environmentally sound decision making.

The Government identified as a priority several initiatives to help Canada's youth become more effective decision-makers. Emphasis was given to educational and training programs and support for young Canadians' participation in international environmental conferences, including the 1992 United Nations Conference on Environment and Development in Brazil.

Sustainable development is only possible when everyone involved is guided by a true spirit of partnership.

Partenaires des Parcs Canadiens
Fraserville, Ontario

The Government is committed to working with aboriginal peoples to address environmental issues of concern to them. It proposed a number of specific initiatives, including the establishment of a First Nations environmental advisory committee and a special native component of the Government's youth employment initiative.

The Government also recognized the need to continue building new and innovative partnerships such as the national, provincial and local round tables that enable people with a wide range of views to share information and ideas.

Efforts to strengthen partnerships have been ongoing since the release of ***The Green Plan*** consultation document. For example, Canada and its international partners agreed to establish a multi-lateral fund to assist developing countries to meet their obligations to phase out chlorofluorocarbons (CFCs). Canada will contribute about $10 million to the fund. As well, federal and provincial ministers of the environment adopted a Statement on Interjurisdictional Co-operation on Environmental Matters. The statement provides a framework for facilitating co-operation on environmental issues, through the establishment of formal agreements, information sharing, and improved linkages between domestic and international initiatives.

What Participants Discussed

Participants emphasized the need to involve all stakeholders in Canadian society in every aspect of the environmental decision-making processes. Recognition and integration of the efforts of all Canadians was the overriding theme of this consultation process. They repeatedly requested broad stakeholder partnerships in virtually every action they proposed.

They pointed out that partnerships are an important instrument for preventing society from becoming polarized and adversarial, and that the sustainable development concept in itself promotes partnerships.

Many participants felt that Canada's environmental protection interests are weakened by interdisciplinary co-ordination problems, with each discipline or stakeholder group working in its own area and using its own agenda. They discussed the need to improve efficiency by co-ordinating initiatives with all levels of government. They stated that, while the federal government must not shirk its leadership responsibility to define policy on national environmental issues, nevertheless, it must work in co-operation with the provinces.

Numerous speakers also pointed out that a national environment strategy must recognize the significant role that municipal governments play in environmental protection. They expressed concern over local, provincial and federal inconsistency and lack of co-ordination in developing and applying laws and regulations. They clearly stated that federal/provincial/municipal partnerships are critical to ensuring consistency, co-ordination and co-operation. They also drew attention to the fact that some provinces and municipalities do not have the necessary funds to implement important environmental initiatives and will need federal assistance.

Participants felt that, in many cases, industry was best equipped to ensure sustainable development. Industry has the human and financial resources and the drive to achieve environmental protection and economic growth. Many felt there were attitudes about other sectors (such as NGOs and ENGOs) held by industry/business that had to become more constructive. Opportunities for various stakeholders to work together were seen as keys to changing these attitudes.

Participants noted that environmental non-governmental organizations (ENGOs) were very successful at raising awareness of environmental issues and educating the public about specific actions to implement change. They also noted that there is often a lack of consensus among environmental groups leading to public skepticism. They pointed out that the environmental networks do not have much money, therefore, governments should help co-ordinate their efforts.

Participants agreed that youth must be included in partnerships, an observation frequently mentioned when discussing education. They considered the advantage of initiating environmental partnerships between youth and industry to educate young Canadians about environmental considerations in industry. Young people, they noted, can help sensitize others to the environment.

Younger participants themselves asked to become involved as full partners in an effective long-term environmental action plan, but pointed out that they currently do not have any national structures to allow their participation to be effective.

Participants felt strongly that the federal government should target all age groups and not focus exclusively on youth. For example, "grey power" has a track record of achievement that would be very useful in environmental issues.

> **Native people are not in a position to deal with environmental problems that occur on an international scale. The appearance of environmental problems in the North can only confirm the poor state of the environment in the rest of the world. We would like to participate in international lobbying campaigns to explain how pollution affects the traditional way of life.**
>
> *Dene Nation*
> *Yellowknife, Northwest Territories*

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To initiate partnerships with government.

Action

- Make *The Green Plan* a national plan through the Canadian Council of Ministers of the Environment (CCME).
- Use existing mechanisms wherever possible, and improve and publicize linkages, since the foundations for effective partnerships already exist: the CCME, round tables, councils, committees, and principles of co-operation.

- Resolve federal/provincial jurisdictional roles and responsibilities, and encode them.

- Co-ordinate, through CCME, environmental efforts to resolve jurisdictional problems in the next 6 to 12 months.

- Avoid duplication of effort.

- Apply national standards to be adopted equally by all jurisdictions.

- Increase CCME consultations with the public and industry. Initiate these public consultations early in the issue-development stage.

- Increase the use of federal/provincial/municipal task forces in the policy-setting stage as well as in the implementation of ***The Green Plan***.

- Transfer funds to municipalities for the implementation of initiatives developed through a national strategy. These could include replacement of aging infrastructures and development of new technologies, such as wastewater treatment.

- Develop and expand staff exchange programs between government and industry, government and non-governmental organizations, and between industries.

- Establish a Canadian Ministry of Environmental Co-ordination as a practical, organized way of ensuring government departments remain focused on the common goal of sustainable development.

Objective

To establish partnerships with industry and business.

Action

- Encourage industry co-operation and partnerships with other sectors through joint efforts on specific issues, research problems and solutions.

- Regulate industry to take greater responsibility for their actions, such as pollution reduction and resource conservation.

- Investigate the use of economic instruments as alternative ways to achieve environmental goals.

- Share the costs between industry and government for activities such as developing new technologies, information and education programs, and emergency teams.

- Encourage industry support for specific environmental projects through sponsorship of other stakeholder groups.

- Encourage interaction between environmental and industrial networks.

- Involve industry directly in efforts to achieve international protocols.

Objective

To encourage partnerships with environmental non-governmental organizations (ENGOs).

Action

- Fund environmental groups and the Canadian Environmental Network to enable its members to play a significant part in environmental decision making.

- Propose a committee to help environmental organizations define their common parameters, and establish a consultative committee of environmentalists to advise the Government.

- Set clear objectives and supply core funding for the hiring of co-ordinators or executive directors.

- Create a communications budget to encourage ENGOs to participate in consultation processes.

- Assist with the financing and co-ordination of multi-sector meetings on the environment, and investigate new techniques such as teleconferencing.

- Encourage the formation of local environmental groups to address local actions.

- Enact tax laws that will support donations from the public for volunteer groups.

- Ensure the Government utilizes the larger, multi-interest mainstream groups to a greater extent.
- Establish "codes of conduct" for ENGOs.
- Recognize, with regard to consultation and participation, that environmental leadership can be provided by groups other than government (such as ENGOs, the public and industry).

Objective

To initiate partnerships with youth.

Action

- Support the creation, by young Canadians, of an independent national environmental organization that would facilitate communication and co-ordination among individual youth groups focused on the environment.
- Increase representation and involvement at all levels of decision making, ranging from the National Round Table on Environment and the Economy to departmental advisory committees.
- Bring youth together at round tables, conferences and other information exchanges and action forums.
- Improve support of youth initiatives that emphasize policies and programs developed and managed by youth.
- Develop leadership by Canada's youth through financially secured summer programs related to the environment.
- Increase support for environmental education, through formal and informal channels, as well as through work-experience opportunities to equip tomorrow's decision makers with the knowledge and skills to face our environmental challenges.
- Fund and create an environmental youth corps using existing youth organizations as a basis.

Objective

To encourage partnerships with older Canadians.

Action

- Develop and enhance leadership by older Canadians.
- Fund and create a "grey corps" similar to the youth corps to become mentors for the youth corps.

Objective

To initiate special partnership programs.

Action

- Apply the Environmental Partners Fund (EPF) to education projects.
- Review EPF criteria for partnerships and expand them to include preliminary research funding to community groups with little or no cash flow.
- Develop participation in the EPF through community-based planning processes.
- Fund local demonstration projects that can be applied nationally.
- Fund liaison centres at the local level.
- Continue and encourage the Environmental Choice Program to identify environmentally friendly products.
- Set up an environmental "participACTION" program, keeping the cost and administration of such a program to an absolute minimum, and using existing mechanisms and networks whenever possible.
- Encourage expansion of the environmental aspects of the Healthy Communities Project developed by the Canadian Public Health Association.
- Encourage municipalities to expand summer programs for children to include environmental education.
- Sponsor regional and national workshops for community leaders to develop skills needed to operate environmentally healthy community projects and share information.

The environment is a problem that concerns all departments.
Quebec Consultation Session

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Develop and expand staff exchange programs between government and industry, and non-governmental groups and industry, to foster better understanding.

2. Develop a consistent consultation process for the development of national environmental policies. The process must include greater use of federal/provincial/municipal task forces and a more active role for the CCME.

3. Release a green paper on economic instruments, followed by multi-stakeholder consultations.

4. Assist individuals and groups to become more effective participants in consultations through better environmental information and education.

5. Establish a national round table at the grass roots level.

6. Encourage environmental awareness in youth by supporting summer employment in environment-related jobs, and by funding youth exchange programs and participation in conferences.

7. Set up a program to give public recognition for environmental leadership at the community level.

8. Increase funding for environmental groups and the Canadian Environmental Network so that its members can play a greater role in environmental decision making.

9. Create and support a national youth advisory council on the environment. This would provide the Government with a youth perspective on environmental issues, facilitate national participation of youth, advise and contribute to national youth conferences on the environment, and create a national youth network.

10. Apply the Environmental Partners Fund to education projects.

11. Continue and expand the Environmental Choice Program to identify and label environmentally friendly products.

12. Set up an environmental "participACTION" program to encourage more environmentally sound individual decision making.

13. Create legislated federal standards for environmental audits and help develop a system for accrediting environmental auditors.

Also see suggestions cited under the "International" and "Native Peoples" sections of this report.

International Partnerships

The Government noted, in its consultation document, *A Framework for Discussion on the Environment*, two essential requirements for building effective multilateral and bilateral partnerships. The first essential requirement is a body of sound international institutions and laws. The second requirement is for mechanisms to assist developing countries in their search for environmentally sustainable development options. Because the Government is committed to strengthening Canada's support of international efforts to address environmental problems, the consultation document suggested that Canada should increase its support of international organizations. Canada will also continue to press for international conventions and protocols to ensure a common commitment to action by our international partners.

The Government also cited two other possible priorities for helping developing countries: increased financial aid and technology transfer.

What Participants Discussed

Participants believe Canada can and should play a leadership role in the global community. Leading by example at home, and seeking international agreements to obtain action by other countries that share common resources and problems were the ways most Canadians felt the federal government should demonstrate international leadership.

Many participants felt that all economically advantaged countries, including Canada, must assist development, in Third World countries. Numerous suggestions were provided about the ways that Canada can provide environmentally responsible aid. Funding, technology development and alternative energy demonstration projects were often mentioned. Many people pointed out that since we all share the same air, forests, wildlife and water (among other global resources), putting an immediate priority on environmentally responsible foreign aid initiatives would also, in fact, be looking after the interests of future generations of Canadians who will share the same planet.

In general, participants believe that more funding should be made available to address development in the Third World. They also feel, however, that increased funding should come from a reallocation of existing funds, particularly through a reassessment of defence priorities. They feel that the largest global threat we face is environmental.

Finally, a large number of participants stressed the need for increased environmental education, in Canada and around the world. Suggestions included global population and birth control (the most frequently discussed need); the development of environmental messages for the millions of visitors who come to Canada each year; ensuring Canadian students learn about the environment; and using Canadian television to augment the education of the current generation of adults, most of whom have never taken any environmental studies in school.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To provide leadership in the global community.

Action

- Review all government trade, debt, and aid policies and programs, paying particular attention to eliminate any adverse environmental implications for developing countries.
- Develop, in consultation with industrial stakeholders, a code of practice for Canadian industries operating outside the country — particularly in developing countries.
- Immediately ratify the Law of the Sea.
- Secure agreements with other countries regarding protection of shared wildlife populations, that is, species that spend parts of their life cycle in different countries. As a priority, Canada should seek migratory wildlife agreements with countries beyond the United States. For example, Canada should immediately bring Mexico into the North American Water fowl Management Plan, and should consider agreements covering sea birds with Greenland; shared resources with France (Saint-Pierre and Miquelon); and shore birds with Surinam.
- Negotiate reciprocal agreements with other countries, as required, to support the concept of no net loss of wildlife species in Canada.

- Continue to work with other circumpolar nations to deal with transboundary pollution and protection of Arctic areas of the globe.

- Set as a priority the development, negotiation and ratification of international protocols to deal effectively with pollution and protection of shared global resources. Climate change, ozone depletion, endangered species and forests were the priorities identified most often.

- Consult regularly with stakeholder groups and provide an opportunity for environmental interests to participate in developing Canada's positions in international environmental negotiations and forums. Canadians want to be an ongoing part of the decision-making processes that affect their environment, their lives and their livelihoods.

- Ensure that Canada does not become uncompetitive in world markets by taking unilateral action, but recognize that Canada cannot afford to wait for other countries to act on global issues. Energy efficiency was suggested as an area where Canada could consider taking unilateral action, since it would not have a great impact on our international competitiveness, could demonstrate our willingness to act, and would concurrently contribute to solving several domestic environmental problems.

- Increase funding and opportunities for Canadian scientists to work with scientists from other countries on research into climate change and other international science efforts.

- Participate in the development of environmental quality standards and monitoring systems to support Canada's efforts to obtain international agreements. There was a great deal of disagreement among participants as to whether we should seek the same standards in all countries or work to ensure that all countries develop standards appropriate for their situation, taking into account domestic effects and their impact on neighbouring countries, and recognizing that different countries will have different priorities.

- Support the work of the World Energy Council, which is involved with 90 countries (from rich to poor), in preparing a report on "Energy For Tomorrow's World."

- Lead an initiative to develop an international convention on shipping covering such areas as tanker traffic, spills and dumping. This convention should ensure that liability and compensation issues are addressed.

- Propose the formation of an international "environment-keeping" force (similar to Canadian efforts in peace-keeping) that could assist in cleaning up environmental disasters and help especially polluted regions, such as Eastern Europe, by providing scientific expertise, technology and experience.

Objective

To increase the priority and the amount of foreign aid Canada provides to developing countries.

Action

- Give incentives to Canadian companies for the development of environmentally friendly technologies and demonstration projects (solar energy and other alternate energy sources were examples).

- Consider such vehicles as the use of subsidies and technology transfer to Third World countries to avoid pollution.

- Lead an initiative to provide for technology transfer to developing countries. The federal government should contribute funding support for receiving nations and immediately canvass Canadian companies, universities and research institutes to assess particular technological and other related niches to define Canadian involvement.

- Funding to other countries should be consistent with the World Conservation Strategy, and all funding agencies should apply the Strategy's principles and objectives as funding criteria. Others suggested that our foreign-aid funding agencies should adopt the same principles, guidelines, policies and goals that we put in our own ***Green Plan*** and use these to make funding decisions abroad.

- Lobby and use influence to have the World Bank and other funding agencies fund only environmentally responsible projects in developing countries.

- Provide the same environmental assessment of foreign aid and development projects in other countries as we do for projects in Canada.

Objective

To ensure that Canada remains competitive in international markets as it implements its ***Green Plan***.

Action

- Pursue the development of a code of environmentally responsible behaviour for multinational organizations.
- Ensure environmental costs are built into international and bilateral agreements, so that any country whose actions have adverse environmental effects would face such measures as penalties or trade sanctions.
- Promote full cost accounting in international development and trade.
- Influence global change through our international purchasing, trade, investment and aid policies.
- Exert influence through common messages at international conferences.
- Use GATT and other trade organizations to improve environmental standards without loss of competitive advantage by countries acting in an environmentally responsible manner.
- Consider developing a coalition with other "middle power" countries to harmonize standards, priorities and actions as a way of influencing some of the other, more powerful, but less environmentally active countries. New Zealand, Australia, Scandinavia, Austria and Switzerland were suggested as possible participants in such a coalition.

Objective

To seek out opportunities for educating people from all countries about the environment.

Action

- Become active in helping the world recognize and deal with its "population explosion." Without exception, people believe that the planet cannot support a doubling of the current world population.
- Use our national parks system, which welcomes millions of foreign visitors every year, to relay environmental messages to the citizens of many countries.
- Encourage and fund more youth, science and trade exchanges, because they are an effective way of educating Canadians and people from other countries.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Review all federal government trade, debt and aid policies and programs, and make any necessary changes to ensure their consistency with the Government's environmental objective of sustainable development.

2. Bring Mexico into the North American Waterfowl Management Plan.

3. Expand Canada's international environmental science efforts.

4. Increase financial support to key international agencies such as the United Nations Environment Programme.

5. Provide the necessary financial resources to ensure continued work on international conventions and protocols in such areas as climate change, ozone depletion, biological diversity, marine oil spill prevention and preparedness, transboundary air pollution and forestry.

6. Work with international partners to establish programs for funding and technology transfer to developing countries similar to the multilateral fund set up to support the phase-out of CFCs.

7. Press for the adoption of internationally binding and enforceable rules to ensure compliance with the conservation and management measures of the Northwest Atlantic Fisheries Organization (NAFO).

8. Increase Canada's financial support for reforestation in developing countries through programs such as the Tropical Forestry Action Plan.

9. Encourage and fund more international youth, science and trade exchanges.

Native Peoples

In the consultation document, *A Framework for Discussion on the Environment*, the Government identified as a priority the strengthening of partnerships with Canada's aboriginal peoples, and committed to working with them to address their environmental concerns. Native peoples must be full partners in decision making that affects the environment. The Government proposed a number of specific initiatives, including the establishment of a First Nations environmental advisory committee. It also made a commitment to consult on other initiatives to support natives' activities for the protection of the environment and proposed a special native component of the Government's youth employment initiative.

What Participants Discussed

Many participants felt that ***The Green Plan*** framework document did not put enough emphasis on native peoples. They felt that native peoples are the real victims of damage to the environment because they often lose hunting and treaty rights, and suffer loss of culture and traditional areas of food gathering and spiritual importance.

Participants supported the concept of an Environmental Advisory Committee composed of representatives of aboriginal peoples. It was suggested that the committee should include industry representatives who have had experience in programs involving groups of aboriginal peoples.

They felt strongly that the resolution of land claims should be a priority. Some felt that Treaty Indian Nations should exercise their inherent right to self-government over their jurisdiction by developing and enacting legislation in respect of wildlife and habitat.

Participants also felt that there should be recognition in the decision-making process of the special rights of aboriginal peoples. ***The Green Plan*** must use the knowledge and skills of the aboriginal peoples to develop actions to encourage co-operation between the two societies, and recognize the need to bring together the values of aboriginal and non-aboriginal societies.

They pointed out that there is a need to strengthen partnership and consultation between all levels of government and Canada's aboriginal peoples, particularly on initiatives that could draw on the experience of aboriginal peoples in their close relationship with the land and the environment. The local aboriginal community should have a say in the decisions taken regarding resource utilization in their region.

Participants felt the Government should respect that aboriginal peoples may have an alternative view about the management of the environment, and a traditional forum for information gathering and decision making. Native peoples could use their specialized knowledge to supplement the observations of scientists in environmental monitoring, particularly in the Arctic. In addition, participants noted that native peoples could play an active role in enforcement of wildlife and other environmental regulations.

Some also felt that consideration should be given to combining land claims and wilderness reserves if there is agreement to keep these areas development-free for the use of native peoples.

There was agreement for the inclusion of natives in the proposed government youth initiatives. Environmental education could be supported in the form of First Nations' wilderness and outdoor education programs, cultural camps, rediscovery programs and other grassroots projects.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To improve and increase opportunities for native people to contribute to the planning and management of Canada's environment.

Action

- Establish a national environmental advisory board of native leaders.
- Hold regional and national workshops on government initiatives such as ***The Green Plan***, led by indigenous peoples, where they can fully express themselves in their own language.
- Increase funds to allow more active native involve ment in environmental issues.

- Confirm aboriginal ownership and management authority for land and resources.
- Involve native peoples in the development of the B.C. Environment 2000 plan.
- Increase native involvement in all environmental decision-making processes.
- Ensure the representation of aboriginal organizations at all levels of round tables and review committees.
- Put in place a special program to encourage native participation in native-directed environmental initiatives.
- Maintain the opportunity for traditional lifestyles.

Objective

To ensure that negotiations for, and settlements of, native land claims include environmental management considerations.

Action

- Develop and implement federal and provincial strategies to resolve native land claims within a time frame acceptable to native peoples.
- Couple land claim settlements with land-use strategies for better environmental management.
- Encourage the provinces to participate in land claims resolution and promote better land management.
- Increase financial and human resources to ensure that there are better environmental controls under memoranda of understanding for aboriginal self-government.
- Review federal and provincial resource agreements to ensure aboriginal communities have adequate access to traditional hunting and fishing grounds on provincial Crown lands.

Objective

To ensure that today's environmental planners and managers have access to, and benefit from, native peoples' accumulated knowledge about the environmentally sound practices embedded in their traditional way of life.

Action

- Facilitate the teaching of the true native history by native peoples to the Canadian public.
- Recognize and adopt traditional methods of environmental management and sustainable development.

Objective

To protect from environmental degradation all historic sites located in areas having significance for native people's heritage and traditions.

Action

- Produce, by 1992, a complete inventory of sacred sites, important to the aboriginal peoples, through a process of ongoing consultations.
- Use existing federal legislation or advocate that provinces use appropriate legislation to protect all sites identified by aboriginal peoples as sacred. Fifty percent of the sites should by protected by the year 1996 and all sites by the year 2000.
- Enact legislation to ensure that any aboriginal artefacts, including burial remains, are managed by aboriginal peoples as soon as possible after discovery.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Give high priority to native sites in the Government's program to complete the representation of national historic themes by the year 2000.

2. Increase funding to native groups and communities to allow more active involvement in environmental issues.

3. Establish a First Nations Environmental Advisory Council to work with government on environmental issues of concern to Indian communities.

4. In consultation with native groups, develop and implement a program to provide training and work experience for native youth in environmentally related jobs.

5. In co-operation with the provinces, review federal and provincial resource agreements to ensure that aboriginal communities have adequate access to traditional hunting and fishing grounds on Crown lands.

6. Improve enforcement of migratory bird regulations, including the establishment of co-operative management boards with native peoples.

7. Develop a national registry of health effects and a monitoring program, and publish annual state of health and environment reports, with particular focus on populations at risk, including native peoples.

Section 2

Action on Environmental Issues

- Environmental Stresses
- The Global Commons
- Sustaining Our Renewable Resource
- Preserving Ecological and Heritage Resources
- Protecting the Arctic Environment
- Other Issues Identified During Consultations

Toxic Substances

In 1988, the Government passed the *Canadian Environmental Protection Act (CEPA)* to deal with the threat of toxic substances. Notwithstanding this legislation, the Government recognized in the consultation document, *A Framework for Discussion on the Environment*, that more needed to be done to ensure the safe production, handling and disposal of toxic substances. Consequently, it identified several priorities, including more rapid assessment of priority substances, more comprehensive monitoring of toxic substances, and increased research. The Government also suggested a national toxicology network as one option for promoting co-ordinated scientific efforts to assess toxic substances.

The development of national standards for effluent and toxic wastes for a number of key industries was also identified as a priority. The Government sought the views of Canadians on what, if any, measures it should take in the event that new standards seriously affected the economic viability of some firms.

Finally, the Government proposed to develop a preventive framework for regulating the biotechnology industry, including, within five years, national regulations on products and by-products.

What Participants Discussed

Participants strongly supported the need for increased controls for toxic chemicals to protect ecosystem components, and the processes and conditions that sustain them. In addition, they overwhelmingly supported the requirement both to remediate, and to prevent, the presence of toxic substances in the environment, in order to prevent harmful effects to human health.

Participants recognized that Canadians are part of a global chemical society, but expressed a strong desire to reduce their dependency and exposure to toxic substances, through the use of more environmentally acceptable alternatives, and more effective life cycle management. Recognizing the current different and often conflicting legal, health and environmental definitions, they felt that a clear definition of toxic chemicals is required.

Participants from all sectors also expressed the need for a systematic and predictable framework, including workable solutions to enable governments and industry to reduce the presence of toxic chemicals in the environment. Although many endorsed the cradle-to-grave framework encoded in *Canadian Environmental Protection Act*, others raised the need for the framework to be more clearly based on the "4 Rs": Reduce, Reuse, Recycle and Recover.

There was a concensus on a number of underlying elements to guide current and future actions. It was agreed that public involvement is necessary in all aspects of chemical management policies and programs; that delays in action are not acceptable; that the onus should be on the "polluter" to prove safety of chemicals; that governments must establish strong domestic and international leadership; that a zero-discharge goal should be the target within the overall context of improved cradle-to-grave management; and that the public needs better information and educational material to make informed choices.

Participants felt strongly that they needed more and improved information and communication channels.

Their suggestions for action could be summed up in a few words: "Improve," "Increase," "Involve" and "Inform." The question of an Environmental Bill of Rights was discussed in several sessions, and although the principle of such a bill seemed to be acceptable to many participants, no consensus as to what this would entail emerged among the broad cross section of those who discussed the toxic chemicals issue. (See the Legislation, Regulation and Enforcement section of this document.)

Canadians have been taking part in major consultations on various aspects of toxic chemicals for the last five years. Participants were generally aware and supportive of these consultations, either completed (for example,

CYI supports more comprehensive monitoring of toxic substances, and stringent national standards for effluents and toxic wastes... National standards under CEPA for all major industries are strongly recommended.

Council of Yukon Indians

> **...increased federal and provincial funding be made available for research, development, and subsequent evaluation on environmentally appropriate and safe (hazardous) waste treatment and disposal technologies...**
>
> *Canadian Federation of University Women*

the cradle-to-grave approach, the Canadian Environmental Protection Act); or underway (the Priority Substances Assessment, NO$_x$/VOCs, pulp and paper regulations); or planned (pesticides review, regulations under CEPA). However, they expressed a need for even more active involvement. They did not attempt to duplicate the ongoing efforts, but rather to recognize that each would bring forward strong recommendations that should form part of *The Green Plan*.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To establish research, assessment and monitoring programs to study all toxic pollutants as an integral whole, in terms of sources and effects, while continuing to support traditional efforts that focus on individual chemicals.

Action

- Establish and maintain an effective monitoring system to record how toxic substances affect human and ecosystem health. This would include providing for special monitoring of vulnerable populations and ensuring full disclosure of monitoring results.
- Increase research into the effect on human health and ecosystems of long-term exposure to low-level toxic substances in the atmosphere. Include a research component in all energy conservation programs that would assess the effects on health.
- Collect baseline data on the state of the environment, particularly where there has been known dumping of toxic substances, such as in old landfill sites.
- Ensure funding goes into research and development on pesticide use, whether commercial or private, and encourage research into the effects of toxic substances on wildlife.
- Establish a national toxicology network among government, industry, and universities across Canada. Restore funding to the National Research Council Toxicology Division for better assessment of chemical toxicity and for further development and promotion of non-toxic or less-toxic alternatives to various industrial processes.
- Augment significantly the existing level of resources for environmental and health-risk management under CEPA, so that the rate at which substances are assessed can be increased over the next 5 to 10 years.
- Conduct critical assessment of health-risk exposure for various fuels, including alternative fuels such as methanol blends and their trace exhaust components. This should occur before significant changes to fuel composition are legislated.
- Develop regulations for biotechnology in a manner that ensures research in this important new area is not unnecessarily impeded.
- Investigate indoor environments, such as "sick building syndrome," with respect to building materials, human health and exposure to chemical or biological elements in these environments.
- Work towards a 1992 implementation of a promotion and monitoring program aimed at worldwide adoption of Canadian standards for the production, use and disposal of toxic substances. Draw the public's attention to countries that do not meet these standards.

Objective

To increase efforts aimed at solving the problems brought about by toxic substances throughout their entire life cycles.

Action

- Establish a system that will define the roles and responsibilities for toxic materials over their life cycles, between all levels of government, business, and individuals. Ensure that each level assumes these responsibilities.

- Identify and involve stakeholders in the formulation of regulations. Support and encourage the "4 Rs" (Reduce, Reuse, Recycle, Recover) through co-operative efforts in industries and municipalities, including promotions, demonstrations, environmental audits and tax incentives.

- Provide adequate resources for rigorous enforcement of regulations, and inform the public of their legislative rights concerning enforcement by producing a Canadian Environmental Bill of Rights that could incorporate freedom of information; public education for informed choices; public funding; and legal standing.

- Reverse the "burden of proof" and require producers to prove the non-toxicity of new chemical products.

- Establish a multi-stakeholder process to produce a mechanism that will ensure that toxic substances are controlled commensurate with their risks. Provide for tougher assessment of all chemicals before they can enter the market, much as drugs are tested for adverse effects on human health.

- Apply national standards to eliminate pollution havens across the country. Give priority to establish ing public, federal, provincial agreements and delay federal regulatory action in areas of primary provincial jurisdiction until agreements are reached. Such standards would apply not only to major industries but also to smaller businesses and to municipalities.

- Establish a National Drinking Water Act that would regulate chemicals and materials in drinking water supplies in all federal jurisdictions. Develop programs to reduce the presence of toxic substances in food, air and consumer products, in order to prevent long-term cumulative effects on health.

- Develop nationwide data collection systems for monitoring and reporting to the public on the concentration of persistent toxic substances in all media, food, drinking water, living organisms and on environmentally related human effects, such as birth defects and incidents of cancer.

- Assist the development of technology that reduces the need to use persistent toxic substances in our industries by endowing four chairs at universities with prominence in this field.

- Adopt, as a national goal, the principle of zero discharge for persistent toxic substances, and adopt, with the establishment of national targets for each sector, the principle of "as-low-as-reasonably-achievable" for discharges, emissions and human exposure to all other potentially toxic substances.

- Set strict standards to reduce the use of environmentally toxic substances by all sectors of the Canadian public and regulate these standards more rigorously. For example, effective immediately, stop the building of new pulp mills that use chlorine, and require existing plants to stop using chlorine by the year 2000.

- Prohibit the manufacture and sale of potentially hazardous chemicals that cannot be recycled or disposed of safely.

- Eliminate non-essential pesticide use and ban pesticides that are scientifically proven to have negative effects on health and the environment. In co-operation with the international community, incorporate these actions into Canadian international policies.

Objective

To develop an overall strategy to minimize the use of hazardous materials in Canadian society, evaluate the risks associated with the disposal of such substances, and ensure meaningful public consultations that allow for the establishment of hazardous waste treatment centres in various parts of Canada.

Action

- Establish a set of permanent hazardous waste storage and disposal sites in various parts of the country. Base location decisions on environmental reviews and adequate public consultation.

- Allocate greater resources to CEPA to allow for effective testing and regulation of toxic substances, thereby minimizing the problems associated with hazardous waste disposal.
- Establish meaningful and productive public consultation programs to ensure that hazardous waste is disposed of correctly and with full consideration for the interests and concerns of all affected stakeholders.
- Increase research and strategies to better determine and minimize the health risks associated with the disposal of hazardous waste.
- Introduce cradle-to-grave toxic waste liability legislation to extend legal liability for proper disposal of harmful substances to the original producer of the substance. Develop policies that will require chemical manufacturers and users to be responsible for the ultimate disposal of all chemicals.
- Implement a system to identify, priorize and clean up orphan toxic waste sites. Ensure that incentives are in place so companies do not hide or improperly dispose of toxic materials.
- Develop a "North-of-60°" clean-up plan that ensures a cost-effective removal of the hazardous waste that has been allowed to accumulate in the Northwest Territories and the Yukon.
- Develop national standards on the reclamation of contaminated sites.
- Support research and development of improved disposal technologies and alternatives such as bioremediation for clean-up. Take a lead role in developing regional hazardous waste treatment centres that include collection, treatment, transfer and disposal. Provide funding for more toxic waste treatment plants.
- Develop a national strategy to deal with bio-medical wastes, including formulation of National Health and Environment guidelines and standards, with target implementation of three years.
- Allow the burning of toxic waste gases by oil and gas companies only under blue-flame conditions.

> **Governments at all levels have an obligation to be aware of the impacts of regulatory decisions... to establish an overall priority framework to maximize the net benefits to society.**
>
> ***Canadian Chemical Producers Association***

- Incorporate the waste disposal cost of de-commissioning a nuclear reactor when evaluating the costs of nuclear power.
- Limit the transport and disposal of Canadian hazardous waste overseas and also into Canada from elsewhere.
- Explore the feasibility of an environmental remediation fund based on the principle of "polluter pays."

Objective

To establish an effective public information and education program that will allow Canadians to make wise "environmentally friendly" decisions.

Action

- Include health protection in the criteria for determining the use of the "eco-logo" system and other "environmentally friendly" labels, and expand, encourage, publicize government and industrial programs about environmentally friendly products.
- Initiate and publicize programs on environmentally friendly lifestyles, through formal and informal education and partnership programs. Create a central system in Ottawa to collect, on an ongoing basis, the ideas and recommendations of all Canadians.
- Support programs to educate the public on the basic concepts of toxicity and risk, and in alternative pest control methods.
- Establish an information network involving existing toxicity centres and provide a link between federal

agencies and education departments to promote education on toxic substances.

- Make polluters and regulation violators known to the public.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Develop and implement a clear policy statement for the management of persistent toxic chemicals.

2. Undertake a comprehensive environmental quality monitoring program for both man-made and natural toxic substances in the environment and their effects on human and ecosystem health. Make the results public on a regular basis.

3. Establish a national toxicology network among government, industry, and universities across Canada and enhance funding to the Toxicology Division of the National Research Council. Funding would be directed to improving the ability to assess chemical toxicity and to encouraging the development of non-toxic or less toxic substitutes.

4. Augment significantly the existing level of resources for environmental and health risk assessment of toxic substances under the *Canadian Environmental Protection Act (CEPA)* in order to ensure the complete assessment of all 44 CEPA Priority Substances by 1994.

5. Promote the development and demonstration of technologies that limit or eliminate the release of toxic substances to the environment.

6. Strengthen regulations under the *Fisheries Act* and CEPA to control emissions of toxic substances.

7. Increase resources available for enforcement of toxic emission regulations including expansion of inspection and investigation forces, and support services.

8. Set national standards for drinking water with the introduction of a Drinking Water Safety Act.

9. Develop an inventory and implement a comprehensive clean-up program for waste sites in the North, including abandoned military facilities, mines, fuel storage sites, camps and well sites.

10. Manage the movement of hazardous wastes into and out of Canada by enacting regulations to implement the provisions of the *Basel Convention*.

11. Develop national standards on the reclamation of contaminated sites.

12. Support information and education programs that promote greater public awareness about the environmental and health risks of toxic substances, their proper use and disposal, and the availability of alternatives.

13. Publish a list of individuals or businesses convicted of violating environmental regulations.

14. Develop, within five years, a preventive framework for regulating the biotechnology industry, including national regulations on products and by-products.

15. Establish a multi-stakeholder panel to revise and update the Priority Substance List.

Waste Management

Canada's environment ministers have agreed to set a national goal of reducing waste generation by 50 percent by the year 2000. Recognizing that local and provincial governments have a major role in waste management, the Government indicated in the consultation document, *A Framework for Discussion on the Environment*, its interest in finding co-operative ways to encourage waste reduction and recycling. An "office of waste management" was suggested as a possible federal initiative to spur all levels of government, industry and individuals to contribute to the 50 percent reduction target. Such an office would expand the national waste exchange program and promote waste reduction and recycling.

> **We must educate our citizens in ways of reducing waste.**
>
> *St. Paul's United Church Outreach Program*
> *Sidney, British Columbia*

In the document, the Government also asked Canadians to consider other options, including national regulations to control packaging and to require recycling, education and awareness programs and the use of pricing mechanisms. In addition, the Government sought Canadians' views on the appropriate balance between regulatory measures and voluntary action.

Canadians were also asked if there were steps that governments could take to both address the concerns of Canadians with respect to locating waste management facilities, and at the same time meet the growing need for such facilities.

What Participants Discussed

Waste management is far from being a Canadian success story. Participants responded by putting forward strategies for achieving the target of a 50 percent reduction in waste by the year 2000. These strategies included reductions in the amount of waste at source; developments and applications of new waste reduction technologies in industry and business in general; changes in the packaging of goods so that consumers' packaging demands are reduced; and incentives to reuse and recycle both goods and the packages they arrive in.

In addition to a waste reduction program, participants indicated their desire to address the special problems associated with hazardous waste. They advocated a proactive approach to the establishment of hazardous waste treatment centres in various parts of Canada.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives. Many of the suggestions that participants made on hazardous waste are outlined in the Toxic Substances section of this document.

Objective

To establish a common legal definition of waste — hazardous and non-hazardous — so waste management can proceed in the most organized way.

Action

- Involve all levels of government and industry in the process of determining an adequate definition for hazardous waste.
- Ensure that the definition of hazardous waste is consistent in *Canadian Environmental Protection Act* and the *Transportation of Dangerous Goods Act* regulations and the Workplace Hazardous Materials Information System.
- Define "waste" to include all goods designed for final disposal.

Objective

To reduce the amount of waste produced in industrial processes and develop more effective technologies for waste disposal.

Action

- Reduce waste generation at source by developing and applying creative waste reduction, recycling and recovery technologies in industrial processes, such as the recovery of mining ore and the use of more recycled fiber in paper.

- Develop a federal strategy that leads to the development and implementation of new waste-reducing industrial processes and products.

- Direct research and analysis towards the development of technologies, infrastructures and economic instruments that minimize waste disposal.

- Examine subsidies, both hidden and overt, that apply to products manufactured from virgin material and adjust them to encourage the manufacture of products that use recycled material.

- Establish a National Waste Technology Centre to coordinate the development of waste-reduction systems and technologies suitable for application in Canada.

- Supply financial support for private research into waste-reduction technologies.

- Move towards more environmentally sound methods of waste disposal such as high temperature incineration.

Objective

To increase the application of reduction, reuse, recycling and recovery principles (the "4 Rs") in the consumption of goods and services.

Action

- Reduce the unnecessary packaging of goods and improve national packaging and container regulations to address not only recycling but also reduction, reuse and recovery.

- Develop an overall federal procurement and operational plan to minimize waste in the Government of Canada. Include clear directives and procedures for the 4 Rs.

- Establish a federal/provincial/municipal task force to review government incentives and disincentives, regulatory regimes, taxes, pricing policies and programs to develop national strategies to minimize waste production.

- Establish a national consumer waste-reduction plan aimed at developing strategies and tactics to encourage the 4 Rs in all goods and services. The plan should consider the health, environmental and energy factors involved in changing consumer behaviour, and the significance of any economic and/or social costs associated with a change in consumption habits.

- Establish a National Office of Waste Management charged with achieving a 50 percent reduction in waste by the year 2000.

- Discourage waste creation by developing pricing systems that fully reflect the direct and indirect costs associated with waste-management processing and disposal, including full life-cycle, cradle-to-grave cost accounting.

- Use fiscal policies to encourage the importation and production of goods and services that create the minimum amount of waste.

- Develop product design strategies that allow for the repair or replacement of worn components, as opposed to the premature obsolescence of consumer goods.

- Include the 4 Rs in the National Building Code.

Objective

To develop information systems that encourage the production and consumption of products and services generating the minimum amount of waste.

Action

- Develop operational guidelines (including definitions) for achieving the 50 percent waste reduction goal by the year 2000 set by the Canadian Council of Ministers of the Environment (CCME).

The Canadian Federation of University Women supports the stand taken by other groups.. for a 50 percent reduction in the amount of packaging waste by the year 2000.

Christine Svobada
The Environment Study Group
University Women's Club

Recyclables should no longer be considered waste. As articles of commerce, they should be exempted from the regulations governing the import and export of hazardous waste.

Sierra Club of Alberta

- Establish a national waste database to quantify the volume and type of waste being produced, to inventory creative reduction strategies, and to monitor the rate at which waste generation is being reduced in line with year 2000 targets.

- Encourage social science research to develop effective methods for distributing information on waste, changing consumer habits and demands, and encouraging effective public reviews and consultations on the siting of waste disposal systems.

- Develop information programs that identify waste minimization techniques, thereby avoiding the costs associated with waste disposal.

- Distribute information widely to producers, distributors, and consumers on the hazards associated with the storage and disposal of waste.

- Establish "1-800" telephone information centres to assist with decisions on the purchase and disposal of goods and services.

- Include waste classification (eco-logo) information on packages.

- Provide resources to encourage local grass roots organizations to obtain and disseminate waste management information.

- Develop waste-management policies that include consultation mechanisms to allow the stakeholder groups — consumers, industry and government — to appreciate and respect each other's objectives, agendas and databases.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Working with the provinces and industry, develop a common definition of "waste" for use in all federal and provincial legislation dealing with waste management.

2. Review federal policies, programs and laws, and make changes as necessary, to ensure their consistency with the Government's objectives on waste management and recycling.

3. Support research and development of waste reduction and recycling technologies at all stages of the product cycle.

4. Develop a federal government procurement and operational plan to minimize waste in the Government of Canada, including clear directives and procedures for the "4 Rs" (Reduce, Reuse, Recycle and Recover).

5. Expand the national waste exchange program and database to improve market opportunities for reuse and recycling.

6. Develop information and educational packages that explain the waste problem and outline waste minimization methods and the Dos and Don'ts of waste disposal.

7. Develop an inventory and implement a comprehensive clean-up program for waste sites in the North, including abandoned military facilities, mines, fuel storage sites, camps and well sites.

8. Manage the movement of hazardous wastes into and out of Canada by enacting regulations to implement the provisions of the *Basel Convention*.

9. Establish standards and regulations to reduce packaging by 50 percent by 2000.

10. Develop national standards, policies, codes and regulations for hazardous and non-hazardous wastes to achieve the 50 percent goal.

Environmental Emergencies

In the consultation document, *A Framework for Discussion on the Environment*, the Government announced its commitment to strengthen its response to the threats posed by both naturally occurring and man-made environmental emergencies, emphasizing prevention and preparedness. For man-made emergencies, the Government promised to introduce a comprehensive environmental emergency program to cover the production, transportation and disposal of oil, chemicals and other potentially hazardous substances. As a priority, attention would be given to the recommendations of the report of the Public Review Panel on Tanker Safety and Marine Spills Response Capability (the Brander/Smith report). In the consultations, the Government was seeking Canadians' opinions on this program, including their views on the role of Canada's military and on ways to enhance the participation of volunteers.

In the case of naturally occurring emergencies, such as extreme weather situations (tornadoes, marine storms, and so on), the Government proposed to upgrade its ability to provide timely and effective warnings. Options presented included improved techniques for understanding and detecting natural hazards, better communications, and enhanced public education about the effects of severe weather.

What Participants Discussed

Participants overwhelmingly agreed that the approach to natural and man-made environmental emergencies must strongly emphasize prevention and preparedness. They recognize that man-made emergencies are virtually inevitable and natural hazards cannot be prevented. For these reasons, the approach to environmental emergencies must include a well thought-out, well-planned response.

Participants saw the federal role as one of leadership through example and education, through the marshaling of resources and expertise and through the implementation of effective, efficient and consistent laws, regulations and standards. Many felt that the federal government holds the primary responsibility for applying the laws and regulations already in place. They also expected the federal government to strengthen, up-date and expand existing federal instruments.

While a few questioned spending more resources on natural hazards, a large proportion of the participants recognized the importance of mitigating the impacts of events such as dangerous marine storms and severe local disasters such as tornadoes. They recognized the advantages of having in place a state-of-the-art prediction system and accepted the importance of maintaining a monitoring system upon which an effective severe-weather warning system is based.

Many pointed out a need for better communications about environmental emergencies, whether natural or man-made. Finally, many participants expressed the wish to see the Canadian military play a greater role in responding to environmental emergencies.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To have all reasonable and practical prevention measures in place.

Action

- Improve government familiarity with existing private-sector emergency programs, such as the system of spill co-operatives in western Canada and the equipment available through the oil-spill containment and recovery (OSCAR) units.

- Increase financial assistance to first-response agencies; and make funds available for improved clean-up technology.

- Continue federal cost-sharing programs for specialized emergency response equipment.

- Provide support to organizations such as the Major Industrial Accident Coordinating Committee (MIACC). Share cost with all levels of government and industry.

- Have government maintain, at private industries' expense, sufficient resources for rapid response to spills.

- Improve the planning process and information dissemination.

Read our lips. Stop the foot dragging.

Grassroots Woodstock
Tavistock, Ontario

- Require an Environmental Impact Assessment for all policies and projects to consider the need for emergency response plans. Prepare effective, efficient, consistent Environmental Response Plans.

- Establish a system for post-event analysis and feedback from response experience to prevention effort.

- Review and update national guidelines emphasizing efficiency and consistency.

- Expand federal training programs to include industry, non-governmental organizations (NGOs), and volunteers. Establish a national database to assist training efforts.

- Enforce existing prevention laws more effectively.

- In co-operation with provincial agencies, industry and the public, strengthen regulations and enforcement regarding the use, storage and disposal of hazardous substances.

- Require companies to meet their responsibilities regarding environmentally safe transportation, record keeping, and sufficient reserves of resources to deal with accidental spills.

- Establish national standards for trailer park wind shelters.

Objective

To maintain and enhance predictive capabilities regarding severe weather events such as marine storms and tornadoes.

Action

- Acquire state-of-the-art equipment for detection and prediction.

- Ensure that government maintains and enhances data monitoring, communication networks, and computing facilities used to monitor and forecast hazardous weather conditions; incorporate state-of-the-art remote sensing technology such as satellite imagery for monitoring and detection, and Doppler radar for early detection and early warning of severe weather events.

- Maintain and enhance the monitoring network for collection of weather data and emphasize short-term, severe weather events rather than routine, day-to-day weather variations.

- Enhance the system for communicating weather information to final users.

- Improve longer-range forecasting of severe weather conditions for the oil exploration/production sector, especially in isolated offshore areas.

Objective

To improve the system for emergency recognition and identification.

Action

- Assign the federal government the lead in improving computer modelling in pollution dispersion and deposition in air and water, and in research on toxic substances, risk assessment and clean-up technology.

- Increase R&D support for detection and identification.

- Apply new technologies for better surveillance and monitoring.

- Undertake joint research projects with industries and universities.

- Establish and publish national guidelines for risk assessment and hazard analysis.

- Research health consequences of environmental emergencies.

Objective

To assign the military an environmental emergency response role.

Action

- Provide military support to the on-scene commander.
- Establish an agency within DND to respond to environmental emergencies. This agency would have authorization to address emergency situations and to bill offending parties. The agency could also develop and oversee an environmental youth corps or reserves.

Objective

To give government the leadership role in educating the public about environmental emergencies.

Action

- Modify and enhance public school system curriculums, in partnership with appropriate provincial and local governments.
- Use media to promote community awareness; and make sound scientific information available.
- Keep the public informed.
- Establish a national information and public warning system using public broadcasting and weather radio.
- Improve public education on the effects of severe weather or pollution emergencies.
- Facilitate reporting by providing one easy-to-remember, toll-free number, from which an operator channels calls to the proper jurisdictional authority.

Objective

To implement special policies to protect the marine environment.

Action

- Ensure Canada acts on the recommendations of the Anderson and Brander/Smith Reports.
- Use regulations to require pilot boats to accompany tankers in Canadian waters.
- Strengthen surveillance to detect chronic marine spills, deliberate release of pollutants.
- Improve safety standards for tankers travelling in Canadian coastal waters.
- Give government the lead role in developing national transportation standards, and promoting international agreements.

Objective

To facilitate and enhance the participation of volunteers and simplify public participation in the reporting of environmental violations.

Action

- Make the public aware of the importance of volunteers.
- Explore the use of "appreciation grants" and stipends to compensate groups supplying volunteers.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

Improving Preparedness

1. Expand and upgrade the national network of weather radar stations, including installation of Doppler radar for earlier detection of severe weather events.

2. Strengthen and modernize monitoring and prediction capabilities by employing state-of-the-art technology, including remote sensing.

> **It's just like the planet is a person and sometimes it skins its knee and you fix it - but now it's dying and we have to operate quickly. We need a 911 for the environment. Man is becoming an endangered species because there are too many of us and not too few.**
>
> *Dustin Costescu*
> *Grade 2*
> *Stephen Leacock Public School*
> *Kanata, Ontario*

3. Maintain and enhance communication networks to provide earlier warning of severe weather conditions.

4. Support programs to increase public awareness about the causes, risks and appropriate responses to environmental emergencies.

5. Establish an agency within the Department of National Defence to respond to environmental emergencies.

6. Support and co-ordinate with industry and other governments a national training program on emergency response.

7. Set national standards and work with the provinces to co-ordinate the certification of chemical emergency response specialists.

8. Increase technical capability to respond to pollution emergencies by upgrading navigational support and shipping-traffic control technology; expanding the charting of Canadian tanker routes; and creating an inventory of spill response equipment.

9. Provide appreciation grants or stipends to compensate groups that supply volunteers.

10. Support R&D on detection and clean-up technology in co-operation with industries and universities.

11. Increase resources to enhance response capability including more trained personnel, and better equipment and communication systems.

Strengthening Prevention

12. Strengthen enforcement of standards aimed at spill prevention, including the provisions of the *Transportation of Dangerous Goods Act*, the *Canadian Environmental Protection Act*, the *Fisheries Act* and the *Canada Shipping Act*.

13. Expand surveillance and inspection of marine traffic.

14. Improve marine vessel traffic services by upgrading radar and communication facilities.

15. Increase safety training programs.

16. Implement tanker design requirements in concert with the United States.

The human health dimensions of environmental problems are both broad and pervasive. The stresses that our activities impose on the natural environment (including the pollution of air, water and land), have short-term and long-term implications for our own health.

Human health considerations are an integral part of ***The Green Plan*** and its objective of sustainable development. The health of the economy, the environment and people are inextricably linked. To sustain a healthy economy we need a healthy environment, and without a healthy environment, human health can be threatened. In ***The Green Plan*** consultation document, *A Framework for Discussion on the Environment*, the Government recognized the links among the environment, the economy and human health and made a commitment to address Canadians' environmentally related health concerns.

The Government proposed specific initiatives to deal with the human health dimension of specific environmental issues. For example, it suggested a national toxicology network to assess toxic substances; California emission standards for cars to help curb local air-quality problems; a Drinking Water Safety Act; and regulation of biotechnology products. Environmental health and toxicology were also identified as priority areas for scientific research. During the course of the consultations, the Government also sought the views of Canadians on other possible actions in education, information, regulation and research.

What Participants Discussed

Participants believe that human health considerations are an integral part of environmental health, and that environmental health should be a key factor in sustainable development. They requested that health be incorporated into all environmental decision making.

Many pointed out that health, the environment and the economy are inextricably linked in the decision-making process. They stated that the indicators of the quality of life, which include air quality, water quality, and food quality, as well as the opportunity to choose lifestyles that protect and respect the environment and human health, must be balanced with traditional economic indicators. For example, many people felt that health should be a major factor in decision making on energy alternatives, and that energy projects should not proceed at the expense of human health and safety.

Participants were very concerned about the presence of toxic substances in the environment, and believe that the federal government should take the lead in identifying the impact of toxic substances on health. They suggested that intergovernmental mechanisms are needed to promote research on the human health effects of toxic materials. Many expressed particular concerns about the presence of toxics or contaminants in foods. They wanted to know what food additives, contaminants or pesticide residues are present in the foods they eat, and they wanted these to be reduced or eliminated.

Participants generally agreed that there is a need for more information to ensure informed decision making on all aspects of health and the environment. They also believed that appropriate knowledge and monitoring is required to assist in the decision-making process. In that context, they feel that wildlife and other elements of the ecosystem are good bio-indicators of the health of ecosystem and human populations.

Some people perceived a shortage of appropriately trained specialists, such as toxicologists or health-care professionals familiar with environmentally related illnesses. In the same context, they felt that risk assessment techniques and communications should be improved.

Many expressed their concern about the quality of their drinking water and proposed ways to ensure that water is made safe for all uses. They also showed concern about air quality and the quality of their everyday working environment, indoors and out. Many participants wished to see the federal government take the lead in addressing these health issues, not only domestically, but internationally as well.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To integrate health more prominently into all environmental policies and decision-making processes.

Human health, the environment and the economy in its broadest sense are inseparably linked. Changes in one of these will impact inevitably on the others. Human beings interact with and are part of the ecosystem. The health of human kind is ultimately dependent upon the well-being of the whole ecosystem.

Toronto Workshop

Action

- Identify the human health component in each environmental and economic decision and address this component in the development of any policy, strategy or plan.

- Ensure that environmental policies and programs represent no increased risk, direct or indirect, of adverse human health effects, and base policies related to health risk on the best available science.

- Ensure that health is an explicit priority in community planning by fostering the "greening" of the urban environment; encouraging urban land use for "health promoting" environments; promoting the use of clean renewable energy and adopting "healthy community" concepts, including transportation, indoor air quality, and air and water quality.

- Apply several approaches to facilitate independent ongoing multi-stakeholder consultations on health and environment issues: Fund local non-government organizations and visible and effective processes for discussing these issues among all stakeholders; use consensus building; guarantee government agency participation; consider the opinions of all stakehold ers; and implement decisions.

- Encourage all public institutions to become models of health and environmental practices by focusing on prevention, conserving energy, reviewing their procurement policies, reviewing the designs of buildings and other man-made environments and discouraging environmentally unfriendly practices, such as "junk mail."

- Take the lead in the development of international standards on health and the environment by initiating a lead role in the 1992 United Nations Conference on Environment and Development in Brazil; reviewing the European Charter on Health and the Environment and developing a Canadian Charter; reviewing foreign aid and international trade and investment to ensure healthy and environmentally sound practices; reviewing international relations (including military) that may be environmentally negative or unhealthy; creating an independent body to monitor international activities; providing public access to information on military sales; and diverting military spending to spending on health and the environment.

- Increase the level of international co-operation to alleviate problems of pollution that impact on human health and northern ecosystems.

- Examine, propose and co-ordinate regulatory and non-regulatory mechanisms to protect health and promote healthy environmental behaviour by reviewing tax incentives for impact; reviewing the adequacy and enforcement of legislation; introducing standards and guidelines; evaluating government policy on an ongoing basis; protecting "whistle blowers"; and allowing access to information.

- Develop minimum national standards for air quality and set more restrictive standards regionally.

- Use health and environment risk assessment as a factor in regulatory decision making.

- Create a publicly accessible, accurate, objective information base on health and the environment by developing a national registry of health effects and a monitoring program to determine how and where health is being affected. Fund research on health effects, increase technological capability on such evaluations, and create annual "state of health and the environment" reports.

- Create and fund an arms-length agency linked to government, industry and academia with funding, mandate and staff to co-ordinate and provide environmental and health information.

- Assemble, synthesize and provide the public with understandable information on risk assessment and the state of human health and the environment. Publish plans for such material by March 1991.
- Establish community-based resource centres to give credible information to the public and increase public awareness.
- Ensure that health protection is a criteria in determining the use of the "eco-logo" system and other environmentally friendly products.
- Promote environmentally sound and economically sustainable lifestyles, emphasizing measures that promote health.
- Increase the number of health professionals trained in decision making and environmental issues by enhancing post-secondary educational programs.
- Maintain and support current trends to improve education on health and environment issues.
- Establish a national centre for toxicology.
- Increase cross-sectoral and interdisciplinary information exchanges through job exchanges and special assignments.
- Identify centres of excellence for research on environmental human health risks and support research, with the centres accepting direction and co-ordination from multi-stakeholder recommendations on environmental health and research.
- Provide a specific mandate and funding to research-granting councils for research on interdisciplinary health effects.
- Enhance research on indoor and outdoor air quality.
- Improve knowledge of the implications of the various energy-use options for health and safety.
- Expand the role of health departments at all levels of government to incorporate health into environment and energy considerations and involve health professionals in energy-use decision making.
- Establish baseline information and increase research and development that addresses health factors in major project and energy related decisions.

Objective

To address the health dimension of all environmental issues.

Action

- Develop nationwide data collection systems for environmental and health monitoring to assist in decision making, priority setting and public reporting on:
  - the concentration of persistent toxic substances in all media (air, water and soil), food, drinking water and living organisms (humans and wildlife);
  - environmentally related human effects, such as infant mortality, birth defects, pregnancy outcomes and cancer incidence;
- Develop a monitoring blueprint by 1991, and reach agreements for provincial involvement by 1992, with the objective of having full implementation by 1994.
- Increase the monitoring of food, natural country foods and food production practices, and implement measures to reduce health risks.
- Adopt realistic levels of detecting chemicals and toxins.
- Improve co-operative arrangements between the federal government and other agencies to improve tracking of contaminants.
- Fund more research on long-term threats to public health, particularly the causes of allergy and immune system breakdowns.

> **Health means not merely the absence of disease, but an optimal state of physical, emotional, social, spiritual and environmental well being.**
>
> *Calgary Workshop*

- Investigate such phenomena as the "sick building syndrome," especially the relationship between building materials and human health.

- Take a lead role in and increase research on environmental toxicants to assess their impact on health, ensuring that all statements about the potential effects of chemicals be made in terms of their risks, and not simply their toxicological properties.

- Carry out risk assessment in Canada to improve understanding of chemicals and their effects. Publish plans by March 1991.

- Improve toxicological testing and risk assessment techniques.

- Increase public awareness of the *Canadian Environmental Protection Act* (CEPA) and increase CEPA funding for the evaluation of new chemicals.

- Improve funding for, increase research on and improve the information available to users of pesticides, chemical products of all kinds, and hazardous materials.

- Take a lead role in promoting environmentally acceptable materials.

- Establish a mandatory certification program for commercial and agricultural pesticide users.

- Set parameters for the content of chemicals and additives in food, and improve labelling of food and chemicals.

- Promote, and educate the public about, the use of effective, non-contaminating alternatives.

- Set standards to reduce the use of toxic substances, including those in housing and building materials.

- Reduce chemical residues and additives in food.

- Reassess packaging standards for the toxic chemical content in the materials and promote environmentally acceptable packaging over marketing needs.

- Establish a national Drinking Water Act to apply to all federal jurisdictions that should regulate chemicals and materials in drinking water.

- Increase funding on water monitoring and improve lab facilities for the assessment of drinking water.

- Establish programs to evaluate existing facilities where hazardous materials are used from a health-risk assessment perspective, and if necessary, provide assistance to relocate industry to less environmentally sensitive areas.

- Adopt a multi-disciplinary approach in the ultimate disposition of hazardous materials.

- Eliminate non-essential uses of pesticides and other chemical products and eliminate pesticides that have been scientifically proven to have negative effects on health and the environment.

- Improve personal protection and practices in the application of pesticides and other chemicals.

- Develop Canadian international policies and programs to eliminate non-essential pesticide and other chemical use in foreign countries.

- Apply special taxes to all toxic substances used where people live and work, such as pesticides licensed for application to urban lawns, trees and gardens, and toxic cleaning and painting products.

- Develop a national strategy in dealing with biomedical wastes, including the formulation of national health and environment guidelines and standards, with a target implementation goal of three years.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

The Challenge is to identify and prioritize potential health risks relating to environmental issues, and to manage those risks with consideration of all possible short- and long-term economic consequences.

Canadian Petroleum Association

1. Increase the capacity to assess the human health impacts of indoor and ambient air quality by, for example, enhancing the program on Long Range Transport of Airborne Pollutants (LRTAP).

2. Increase support for research into the health effects of ozone depletion.

3. Introduce a Drinking Water Safety Act, develop regulations for drinking water and pursue monitoring.

4. Establish an information clearinghouse with information for the public on health and the environment, including the most recent research findings.

5. Establish a national toxicology network among government, industry, and universities across Canada.

6. Under the *Canadian Environmental Protection Act* (CEPA), significantly augment the existing level of resources for environmental and health risk assessment of toxic substances.

7. Within five years, develop a preventive framework for regulating the biotechnology industry, including national regulations on products and by-products.

8. Develop a national registry of health effects and a monitoring program and publish annual "state of health and environment" reports, with particular focus on populations at risk including infants, children, northern populations and native peoples.

9. Establish a national toxicology centre.

10. Identify and support "centres of excellence" on environmental health risks.

11. Increase the monitoring of food and production practices, including chemical residues and contaminants, to enhance measures that reduce risk in northern and remote areas.

12. Establish "science aid" (similar to legal aid) to assist the public in determining whether community health is being affected by environmental stresses.

13. Augment the health and environmental assessment, management and monitoring (including food) of agricultural chemicals, especially pesticides, in order to reduce the risk to human health.

14. Develop and fund a program to promote community-wide action on environment and health issues. Build on existing local programs where possible, such as the Healthy Communities Program.

15. Establish a public education program, similar to ParticipACTION, to promote greater awareness of health and the environment and more environmentally sensitive behaviour.

Global Warming

In the consultation document, *A Framework for Discussion on the Environment*, the problem of global warming was identified as a formidable policy challenge, demanding an international and domestic response strategy built on sound scientific information, while recognizing the need for early precautionary actions in the absence of complete knowledge. The Government reiterated its endorsement of a global convention on climate change and committed Canada to a comprehensive national approach to the management of greenhouse gases.

The Government noted that the scope and nature of ongoing scientific efforts needed to be re-examined in the light of the many gaps in our understanding of the problem. The establishment of a climate change research centre was suggested as a possible means of focusing Canada's scientific efforts. To solicit the views of Canadians on some of the very difficult environmental and economic trade-offs, the consultation document posed a series of questions regarding targets, mechanisms for reducing greenhouse gases, the willingness of Canadians to pay the price, and the role of energy efficiency and other forms of energy, including nuclear. The Government also recognized the important role of forests as a sink for carbon and noted that measures to encourage sustainable forestry practices were under consideration.

At a recent meeting in Bergen, Norway, the member countries of the Economic Commission for Europe (ECE), which includes Canada, committed to "establish national strategies and/or targets and schedules following the report of the IPCC (i.e., the report of the Intergovernmental Panel on Climate Change, expected this month) and no later than the start of negotiations of a framework convention on climate change (now planned for February, 1991) to limit or reduce CO_2 emissions and other greenhouse gas emissions as much as possible and to stabilize them." Canada and most other ECE countries expressed the view that stabilization at the latest by the year 2000 and at present levels must be the first step.

The federal government is now working with the provinces to develop a national action strategy on climate change. Our proposed approach is guided by three fundamental principles:

- Canada's strategy must be comprehensive inasmuch as it should deal with all the major greenhouse gases and the important CO_2 sink of forests.

- The Canadian response must be developed in the context of international efforts to deal with the issue. Climate change is a global problem that can only be addressed successfully through international co-operation.

- The national action strategy must give us the flexibility to respond to new information and developments over time. As a result, it must establish a process for continually monitoring developments, for reducing uncertainties, and for putting Canada in a position to respond with appropriate measures at every step of the way.

The federal government is considering a response program that has three elements: limitation, adaptation and reducing uncertainties. Limitation measures are required if Canada is to do its part in the global effort to control greenhouse gas emissions. As a first step, the Government is considering measures that make economic sense in their own right and serve multiple policy objectives, such as energy efficiency initiatives, reforestation and elimination of CFCs. Beyond these first steps, more far-reaching measures may be required to stabilize or reduce greenhouse gas emissions. As part of the national action strategy, the Government believes that processes should be put in place for a close examination of these measures. Through this progressive, phased approach, Canada can be positioned to respond quickly with the appropriate limitation actions as required over time. Canada will also pursue aggressively the negotiations of an International Convention on Climate Change and some implementing protocols by 1992.

Notwithstanding the success of both domestic and international limitation programs, the scientific evidence suggests that some degree of global warming is inevitable over the coming decades. It will be necessary to adapt to the warmer climate. As a result, the federal government is considering a number of adaptation measures as part of its overall response strategy.

Finally, although there is a general consensus among scientists that climate change will occur, there still are many scientific uncertainties, including the magnitude, timing, rate and regional distribution of climate change. The federal government is considering initiatives to increase support for domestic climate change research and to strengthen international research efforts in this area. It is hoped that these initiatives will help to reduce scientific uncertainties.

What Participants Discussed

As an issue with considerable implications for economic security and ecosystem integrity, global warming generated tremendous interest. Participants talked about the need for strong federal leadership, both nationally and internationally. However, they wanted assurance that all stakeholders would have a fair share in the Canadian component of the decision-making process. They also recognized a need for greater research and monitoring, to reduce the current scientific uncertainties such as the magnitude, timing, and implications of climatic warming.

The major point of contention, however, related to the adoption of greenhouse gas reduction targets. Some recommended immediate action towards a goal of 20 percent CO_2 emissions reduction by the year 2005, a target they considered to be readily achievable. Others, however, expressed caution, and voiced concerns over economic hardships that could arise both domestically and internationally, if Canada were to adopt unilateral emissions reduction targets. Participants foresaw a need for a broad range of regulatory, economic and technological mechanisms to address the issue, stating that many actions would make sense in their own right, because they would contribute to the solution of other environmental concerns.

There was agreement on the need for energy conservation and further research into more environmentally friendly energy options. Many promoted the need for alternatives to the automobile, such as mass transit and bicycles. If economic measures such as a "carbon tax" are employed, many participants wanted assurance that money generated would not fall into general government revenue but would be used instead to address the environmental issues at hand.

Canada's first priority should be to foster the development of a significantly improved understanding of the scientific and economic consequences of actions that might be contemplated to reduce the build-up of greenhouse gases in the atmosphere.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To provide leadership on this issue, both nationally and internationally.

Action

- Factor global warming into the federal government's decision making and promote the same in other jurisdictions, specifically in areas such as forest and other sectorial policies; protected area networks; infrastructure, such as hydro-electric facilities; and coastal zone planning.
- Develop partnerships that recognize all stakeholders and their responsibilities.
- Continue to promote awareness through the hosting of international summits and conferences.
- Continue to promote the development and acceptance of international agreements on greenhouse gas emission reductions.
- Support the development, demonstration, and transfer of new technologies, nationally and internationally.

- Continue to participate actively in international forums such as the Intergovernmental Panel on Climatic Change.

- Support international institutions and programs such as the United Nations Environment Programme, and global change research programs.

- Set an example for others to follow, in areas such as energy efficiency standards for government facilities, increased fuel efficiency requirements for government vehicles, and environmentally responsible purchasing policies.

Objective

To increase the financial and moral support for research and monitoring efforts designed to improve understanding of the greenhouse effect, its consequences and response mechanisms.

Action

- Promote improvements in atmospheric models to enhance their predictive capacity (for example, lower margin of error, regional scale capabilities).

- Promote the development of ecosystem response models.

- Increase environmental monitoring through remote sensing and other techniques, to improve identification of climatic trends and assessment of climatic variability.

- Support additional research on the carbon cycle and other natural cycles.

- Promote research on technologies to manage greenhouse gases, for example, CO_2 scrubbers for major point sources; methane capture from landfills.

- Promote research on more environmentally friendly energy alternatives such as solar, wind biomass, and hydrogen sources, and improve battery and energy storage technologies.

- Co-ordinate periodic reviews of research progress by multi-stakeholder groups.

Objective

To contribute to the control of the greenhouse gas emissions arising from human activity.

Action

- Act now to stabilize greenhouse gas emissions.

- Thoroughly examine, through a multi-stakeholder process, the feasibility and implications of a 20 percent reduction, by the year 2005, of national 1988 CO_2 emission levels.

- Set and periodically review CO_2 and other greenhouse gas reduction targets, in light of changing technologies and economic conditions.

- Promote improved management of greenhouse gas sinks through measures such as enhanced reforestation and careful tree selection; increased urban and rural tree planting (for example, on erosion-susceptible farmland); better agricultural soil management practices; increased paper recycling; and reduction in peatland drainage.

- Legislate an accelerated phase-out of CFCs.

- Develop and implement CFC recovery and disposal programs.

- Demand reduced methane emissions from petroleum-related operations.

- Encourage composting to reduce methane production in landfills.

- Create a "level playing field" for all energy options through elimination of subsidies or equal subsidization and the factoring of environmental costs into the cost of energy development and production.

- Thoroughly evaluate new energy source proposals, notably megaprojects, for their greenhouse gas production potential.

- Promote the development and use of waste heat-recovery systems.

- Promote energy "co-generation" through technology transfer, and access to the electrical grid.

Objective

To develop and adopt more energy-efficient and environmentally friendly transportation methods.

Action

- Legislate stricter vehicle fuel efficiency standards, (for example, doubled fleet efficiency by 2005), and provide economic incentives to enable this to happen through a vehicle tax structure that relates to fuel efficiency.

- Develop standards for and promote mandatory, nation-wide, periodic vehicle emission control checks.

- Promote mass transit and other alternatives to the automobile, including light rail transit in urban regions, and increased rail service in general where markets exist (for example, high-speed trains); better infrastructure for bicycles, such as urban bicycle lanes; better infrastructure and incentives for water and rail transport; automobile-free zones in cities; and "bus only" lanes and routes in cities.

- Promote more efficient automobile use through car pooling, high occupancy vehicle lanes, and other measures, with federal employees setting an example.

- Promote alternatives in commuting, such as staggered work hours and telecommuting.

Objective

To improve the understanding of the nature and consequences of global warming through education and heightened awareness.

Action

- Initiate an environmental "participaction" program that reaches and stimulates individuals (should include promotion of the financial benefits of energy conservation, lifestyle changes).

- Foster community-based action through programs such as the Environmental Partners Fund.

- Operate a national clearing house for information pertaining to global warming and energy conservation and efficiency.

- Sponsor contests, awards and programs that reward new or unique ideas, technologies.

- Make research results and general environmental information more accessible to the public.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

Enhancing Ability to Adapt

1. Establish a regional and national climate-monitoring network to better identify trends in climate changes throughout Canada and to assist in planning for any necessary adaptive measures.

2. Increase research into the socio-economic implications of climate change for the regions of Canada to identify areas and issues of significant sensitivity where action may be necessary.

3. Enhance research into policy options to improve the resilience of key climate-dependent sectors, including forestry, agriculture, hydro-electric power, water resource development and fisheries.

4. Undertake an education and communications initiative aimed at the general public and economic decision makers to assist in adaptation to climate change.

While continuing to support further research into the causes and effects of global warming, Canada should embark on a program to reduce carbon dioxide emissions by pursuing strategies that make sense in their own right. These include improvements in energy efficiency, insulation standards, research and financial support for new and cleaner technologies, support for alternative fuels, etc.

Canadian Manufacturing Association

Reducing Uncertainties

5. Support and increase research into the composition of the atmosphere, and into the physical, chemical and biological processes associated with climate change.

6. Enhance Canadian participation in international scientific efforts.

7. Improve Canada's ability to predict climate change and its impacts by supporting the development of better scientific models of climate change.

Limiting Emissions — First Steps

8. Set up a national clearing house for environmental information, including information on global warming and energy efficiency, to help Canadians better understand the actions they can take on their own to reduce greenhouse gas emissions.

9. Develop and support a Canadian reforestation program for urban and rural areas.

10. Actively support international programs and institutions concerned with climate change, such as the World Meteorological Organization and the United Nations Environment Programme.

11. Set targets and implement programs for improving energy efficiency in government facilities and vehicle fleets, and adopt environmentally responsible procurement policies.

12. Upgrade federal building codes and guidelines to promote greater energy efficiency in buildings.

13. Set out mandatory minimum standards for the energy efficiency of energy-consuming products, including household appliances, and heating and cooling equipment.

14. Strengthen fuel consumption standards for new automobiles.

15. Consider a "gas guzzler" tax/ "gas sipper" rebate system.

16. Build on existing consultative mechanisms between government and industry to explore opportunities to improve energy efficiency in target sectors.

17. Initiate an environmental "participaction program" to encourage individuals to conserve energy.

18. Enhance R&D programs to:
    - promote the development, commercialization and transfer of technologies that will enhance the efficient use of energy, particularly in energy intensive sectors such as transportation; and,
    - support research into longer-term alternative energy options such as liquid fuels from biomass and solar energy.

19. Through demonstration and information, promote market penetration of alternative energy, including natural gas, methanol and energy from biowaste.

20. Introduce measures to reduce emissions of methane, for example, from landfill sites.

21. Introduce a program to encourage changes in agricultural practices that reduce greenhouse gas emissions (i.e., nitrous oxide and methane).

Beyond The First Steps

22. Examine merits of economic incentives and disincentives as a means of reducing greenhouse gas emissions.

23. Initiate a process to study the feasibility and implications of implementing a national CO_2 emissions control program, including the possible use of a carbon permit-trading system.

24. Initiate a review of the role of nuclear energy in a long-term strategy to reduce CO_2 emissions.

25. Work with the provinces and municipalities on a strategy for encouraging increased use of urban mass transit in Canada.

26. Initiate with the provinces a cross-Canada review of electric utility pricing and regulatory structures and determine what, if any, changes should be undertaken to promote greater improvements in energy efficiency and conservation.

We must make commitments such as emission targets or we will have no way of evaluating our success. Without the commitment there is no target, there is no will, and there is no incentive.

Dr. Niels Damgaard
Calgary, Alberta

Ozone Depletion

Building on the success of its efforts to date, the Government outlined a two-part approach to further action on the ozone problem in the consultation document, *A Framework For Discussion on the Environment.*

The first involved more rapid domestic phase-out of chlorofluorocarbons (CFCs); the elimination of Canadian production and importation of CFCs and halons; and the possible elimination of other ozone-depleting substances by 1999. In addition, as part of its overall science program, the Government proposed to increase support for ozone research. The Government asked Canadians to consider the need for a permanent Arctic ozone observatory.

The second part involved continued co-operative international action. Canadians were asked to consider ways Canada could assist developing countries to protect the ozone layer, while at the same time permitting them to meet their aspirations for economic development. Two suggested options were technology transfer and dedicated funding to assist compliance.

> **Canadian production and importation of CFCs, halons and other ozone depleting substances must be eliminated immediately!**
>
> ***Canadian Parks and Wilderness Society***

In June of this year, parties to the Montreal Protocol agreed to strengthen the provisions of the agreement by accelerating the phase-out of controlled CFCs, adding a phase-out of other ozone-depleting substances, and establishing a multilateral fund to help developing countries meet their phase-out obligations. As well, Canada undertook to introduce a domestic program that would go beyond its international obligations by providing for the complete elimination of controlled CFCs by 1997. Details of the regulatory program to meet this objective will be released this fall with the Government's response to the report of the Parliamentary Standing Committee on the Environment, *Deadly Releases: CFCs*. The response will also be guided by input from ***The Green Plan*** consultations, and earlier discussions with industry, the provinces and environmental groups. As part of its obligations under the strengthened protocol, Canada will also contribute about $10 million to the new multilateral fund.

What Participants Discussed

Participants recognized that Canada's achievement in research of the ozone layer and its depletion has up to now been exemplary. This work has added crucial information to the international pool of knowledge on stratospheric ozone. Nevertheless, they felt that Canada and the international community must take further action.

The majority of participants expect the federal government to take all necessary steps to rapidly curtail the production and importation of ozone-depleting substances, so that as substitutes are found for these chemicals, a complete ban on their use can be put in place. Since ozone depletion is a global problem, participants expect the Government to be active in the transfer of advanced technology to less developed nations so that emissions of substances harmful to the ozone layer can be reduced to negligible levels worldwide.

In many cases, they would like the Government to do "more" and do it "sooner."

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To eliminate, through federal regulation, the emission of CFCs and other ozone-depleting substances.

Action

- Promote the development of technology for the effective recycling or destruction of CFCs.
- Provide financial initiatives for using alternatives to CFCs.
- Increase research for the development of alternatives to CFCs and other ozone-depleting substances.

...specific regulatory initiatives to prohibit particular uses of CFCs should not be undertaken until effective substitutes can be found and are commercially available in adequate quantities.

The Canadian Chemical Producers' Association

- Support the establishment of an Arctic ozone research and monitoring facility.
- Discourage the use of CFCs and other ozone-depleting substances internationally.
- Put an all-out ban on CFCs and items containing CFCs.
- Assist developing countries in utilizing alternatives to CFCs and other ozone-depleting substances.
- Accelerate the timetable for elimination of ozone-depleting gases including CFCs and halons.
- Meet the requirements of the Montreal Protocol.
- Implement, through legislation, a CFC recovery and destruction program.
- Regulate under the *Canadian Environmental Protection Act* (CEPA), and work towards equivalent legislation/regulations for provincial follow-through.
- Develop an immediate program to halt CFC/HFC emissions with a fixed target date, for example, by banning all sales of CFC-based refrigerators, air-conditioning systems and related products.
- The federal government should help to fund and encourage all developed countries to finance the production of energy-efficient refrigerators that do not use CFCs.
- Provide financial support for local level reclamation programs addressing CFCs and halons.
- Set targets for eliminating semi-friendly alternatives, for example, HCFCs as interim measures.
- Ensure that all servicers of CFC-based equipment have recapture equipment and are properly trained and licensed.
- Restrict the sale of ozone-depleting substances to licensed personnel.
- Review and incorporate into ***The Green Plan*** the recommendations of the June 1990 report on ozone depletion, "*Deadly Releases: CFCs*," by the Standing Committee on Environment.
- Broaden ozone-depletion research to include not only the effect of increased ultraviolet radiation on humans, but also its effect on the marine environment (for example, researchers need to assess the impact on marine phytoplankton).

Objective

To increase public education.

Action

- Require manufacturers to educate the users of CFCs and other ozone-depleting substances on the hazards of these substances, and the recycling and control measures.
- Promote better understanding of Canadians' exposure to ultraviolet radiation through the use of Canadian data; do not rely solely on U.S. data.
- Make certain that cost-shared research results are made public.
- Educate scientists to communicate with the public.

...this area (ozone depletion) is of major concern to our planet.

Mrs. Cindy Mayor and Milverton Close
Waterdown, Ontario

Although ozone depletion is an important global problem... priority should be on water quality, toxic emissions and wastes.

Ortech International
Mississauga, Ontario

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Support the development of control technologies, including CFC recycling, CFC destruction and alternatives to CFCs.

2. Increase ozone monitoring and research, particularly on destruction rates and processes, and the environmental and human health effects of increased ultraviolet radiation.

3. As part of an expanded research program, establish an Arctic ozone research and monitoring facility.

4. Set targets and establish a program for the elimination of "semi-friendly" alternatives such as HCFCs.

5. Implement a national CFC recovery and destruction program.

6. Increase user awareness of the proper use and disposal of CFCs and other ozone-depleting substances.

Acid Rain

In the consultation document, *A Framework for Discussion on the Environment*, the Government of Canada set out its two basic priorities on acid rain: pressing the U.S. government to pass acid rain legislation, and the post-1994 domestic program. On the U.S. front, the Government said that to codify commitments to deal with the acid rain problem, Canada would continue to seek negotiations with the United States for a Transboundary Air Quality Accord. On the domestic side, the Government asked Canadians what, if any, additional control measures should be taken for the period beyond 1994, when the current program will be completed.

The Government committed itself to continue research on the problem by extending, in co-operation with the provinces, the program on Long-range Transport of Airborne Pollutants (LRTAP). The consultation document also asked Canadians to identify what additional work was required to verify the effectiveness of the current acid rain program and to determine the need for additional measures.

> **It must also be remembered that "Good planets are hard to find." I look forward to seeing how our nation's *Green Plan* will ensure that we don't have to begin looking for another one.**
>
> *T. A. Makinen*
> *Burnaby, British Columbia*

On July 16, 1990, the Prime Minister and President Bush signed an agreement to immediately begin negotiation of a comprehensive Transboundary Air Quality Accord. Initially, the accord will focus on the control of acid-rain causing pollutants, sulphur dioxide and nitrogen oxides; however, it will also provide the framework for controlling a wide range of other transboundary air pollutants.

What Participants Discussed

In general, participants expressed a great deal of support for Canada's current acid-rain control efforts. For the post-1994 period, however, there were varying points of view as to whether regulatory limits, further reductions or bringing the western provinces into the program were appropriate goals. While the comments were wide-ranging, they could be summarized as a need for more information to make decisions about conducting research to establish target loads for sensitive ecosystems; setting appropriate target loadings for western Canada; evaluating the effects of acid rain on human health and forests; and determining the results of our current efforts (and those proposed in the United States).

There is certainly no general support for arbitrarily requiring further reductions in emissions. Participants stressed that, as is the feeling with current efforts, any further cuts should be based on good scientific analysis of environmental or health needs.

Many people also stressed the need to move away from programs to address individual air pollutants. They preferred to develop a more systematic picture of overall air quality. A great many people also agreed that it is time to consider using economic instruments as a tool, since they recognize that achieving desirable air quality requires a great deal of action by many people. Limited resources must be allocated in a rational way if Canadians want to do everything that needs to be done.

In western Canada, most people feel there is no evidence of an acid rain problem. However, a few Westerners said that Canada needs common regulations. These comments were made during discussions related to Canada's dealings with other countries.

Within the global community, people felt Canada should continue its co-operative scientific efforts and take a leadership role in getting other countries to improve air quality on a global basis. Many people said Canadian efforts alone could never achieve the results needed. Canada is dependent on co-operative efforts by all countries and should stress this issue.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

> **Emmission targets should be set at the national level to encourage the interaction of all sectors of the economy towards cost-effective solutions.**
>
> ***Canadian Electrical Association***

Objective

To determine the need for further control/reduction measures after 1994 and examine implementation strategies.

Action

- Set, in co-operation with the provinces, appropriate target loads in each of the western provinces and target loadings for the most sensitive ecosystems in eastern Canada.
- Provide easily understood reports of targets, of the effectiveness of Canada's current control program and of the impact of the proposed U.S. program.
- Implement further cuts, particularly to protect the most sensitive forests and watersheds of Quebec and the rest of eastern Canada.
- Recognize regional differences in both sources and impacts, in any national policy or program.
- Implement a more holistic air-quality program to replace the approach of dealing individually with pollutants and air-quality problems.
- Address the possible use of economic instruments, either to reduce further or to maintain 1994 levels. Possible tools include taxes, trading, user fees and incentives.
- Give priority to control actions that provide a synergistic impact, particularly ones that begin to address global warming along with pollution issues. This would be especially important when considering the use of incentives.
- Increase the scientific effort and information on air-quality problems. Governments must begin taking action, especially where needs and benefits are obvious and the same action addresses several problems.

Objective

To evaluate the effectiveness of Canada's current acid rain control program.

Action

- Encourage New Brunswick and Nova Scotia to pass the required regulations to deal with the reductions they have committed to undertake by 1994.
- Allocate, within the next year, the currently unassigned emission reductions scheduled to occur by 1994.
- Determine whether or not to bring western provinces into a national program after 1994.
- Increase research into the effects of acid rain on health and forests, and link these and other air-quality issues.
- Implement, as a priority, actions to control the contribution of emissions of nitrogen oxides (NOx) to acid rain, and address transportation issues (vehicles and mass transit were the two most often mentioned) in order to deal with many air-quality problems.
- Review all federal policies to assess whether their objectives support or conflict with achieving environmental objectives, and give priority to policies dealing with transportation and energy that are affected by contradictory departmental objectives.
- Eliminate conflicting policies.

Objective

To determine what role Canada should play in international efforts to deal with acid rain.

Action

- Continue Canadian efforts to get the United States to deal with sulphur dioxide emissions from U.S. industries that are causing damage in this country.
- Continue to work with other countries to reduce acid rain emissions on a global basis.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Expand the Acid Rain Control Program to include the western provinces, with emissions capped at an appropriate level.

2. Work with the seven eastern provinces to establish a program to cap sulphur dioxide emissions at 1994 levels.

3. Investigate the use of economic instruments as a means of reducing acid-rain causing emissions.

4. Enhance the Long Range Transport of Airborne Pollutants (LRTAP) program to verify the effectiveness of the current acid-rain control actions; to assess emerging problems such as forest decline and human health impacts, and to determine the need for further measures.

5. Provide more readily understandable reports about progress in reducing acid rain emissions.

> **In a peculiar way, it doesn't matter who is right anymore, Success will lie in our ability to work together.**
>
> ***Artists' Response Team***
> ***Vancouver, British Columbia***

Air Quality and Toxic Air Pollutants

The Government of Canada and the provinces, through the Canadian Council of Ministers of the Environment, are developing a comprehensive 10-year national plan to manage emissions of nitrogen oxides (NOx) and volatile organic compounds (VOCs) — pollutants central to the formation of ground-level ozone, or smog. Apart from the deleterious local effects of smog on human health, it is also a greenhouse gas which contributes to global warming.

In the consultation document, *A Framework for Discussion on the Environment*, the Government asked Canadians about establishing California emission standards for 1994 model year cars, in order to supplement information gathered in separate consultations on the plan. Canadians were also asked for their opinions on methods of achieving our goals with respect to NOx and VOCs. In particular, the Government sought their views on the use of economic instruments to compliment regulatory controls in reducing emissions.

The Government also noted in the consultation document that, as with acid rain, Canadian actions alone would not be sufficient to reduce toxic air pollution. Consequently, the Government promised to pursue negotiations with the United States under the Transboundary Air Quality Accord to incorporate both countries' commitments to controlling the flow of toxic air pollutants and VOCs.

On July 16, 1990, Canada and the United States agreed to begin negotiation of a Transboundary Air Quality Accord that would provide a comprehensive framework for managing a wide range of transboundary pollutants, including VOCs and toxic air pollutants.

What Participants Discussed

Participants identified more research into air-quality issues as an imperative that offers solid opportunities for the federal government to build partnerships with industries, universities and other levels of government.

Of major concern to participants is indoor air quality. People were concerned that this was not dealt with in the discussion paper. Many felt that indoor air may constitute the greatest human health threat we are exposed to on a regular basis and that a national policy, including standards and guidelines on indoor air quality, must be a priority.

Participants want much more emphasis placed on research into the health risks associated with air pollution, and a better national air-quality monitoring system – one that will monitor the effects of air pollution on an ecosystem basis and take into account the combined effects of all air pollutants in an area. This was particularly identified for large urban areas. They also want this information to be publicly available.

Participants tended to prefer regional solutions to regional problems, but discussion suggested a desire for minimum national air-quality standards, based on human and environmental health, with further restrictions developed in regions where problems warranted.

The global dimension of our air quality was clear to participants. They recognize that achieving good air quality is a complex, expensive endeavour, and that it won't happen overnight. People suggested that, domestically, Canada should establish some interim goals, leading toward a national long-term objective, so that everyone can see clearly where progress is being made.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To immediately reduce emissions from transportation sources.

Action

- Implement regular vehicle inspections in conjunction with annual plate renewals.
- Investigate and identify ways to reduce the number of vehicles on the road. Participants identified taxing use and multiple vehicles, and restrictions on single-occupant cars, as potentially helpful in reducing vehicle use. Many people, however, said that the only lasting solution (for vehicle emissions) would be to redirect transportation demands. Incentives and good public transit are necessary to encourage people to leave their cars at home.

> **We would generally applaud the concept of national standards so that pollution havens... are eliminated and all companies are working on a level playing field.**
>
> *Canadian Steel Environmental Association*

- Adopt and implement California vehicle standards. Some people wondered if these standards could be achieved before 1994; they commented that we didn't want to get into the same pollution situation that exists in southern California.
- Establish common vehicle emission standards in Canada and the United States, since automobile markets are already so integrated and with Free Trade will no doubt become more so.
- Increase support (especially through funding) for mass transit development in all areas of the country.
- Develop a policy regarding the use of government vehicles. Several people made particular mention of the number of vehicles used by National Defence.
- Develop national standards for airplanes, boats and trains.

Objective

To review possible strategies for implementing suggestions.

Action

- Explore the use of economic instruments such as user fees, tradeable emission permits and subsidies. In order to deal effectively with all air-quality issues, participants feel that in addition to legislation, penalties, etc., incentives and flexibility will also need to be built into any action plans.
- Enforce current legislation across the country.

Objective

To establish air-quality research priorities.

Action

- Initiate research immediately to assess indoor air quality and its impact on human health.
- Establish minimum national indoor air-quality standards at the earliest possible date.
- Increase research on air-quality problems in order to understand and adequately protect the health of Canadians. Strong emphasis should be put on the need to develop better information about the cumulative effects of individual pollutants.
- Adopt a more holistic approach to understanding both the impacts of air-quality problems and the strategies for dealing with or preventing them.
- Support more multi-disciplinary ecosystem studies to improve our knowledge and understanding of the impacts of air quality on human and environmental health. An improved information base is essential if we expect decision-makers to change the way they develop solutions.

Objective

To play a strong role in the global community.

Action

- Work co-operatively with the United States on transboundary air solutions and continue to play a leadership role in getting international protocols in place to address the global nature of air-quality problems and solutions. People stressed that, internationally, Canada can not hope to solve air-quality problems alone.
- Provide assistance to Third World countries in finding better ways of dealing with air pollution caused by fossil fuels. It was suggested that because of the significantly lower power demands in these countries, Canada should consider funding demonstration projects using some of the alternate sources (for example, wind and solar power).

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Set emission reduction targets and establish corresponding operating procedures for the federal government's fleet of vehicles.

2. Establish a national air-quality monitoring program.

3. As part of the federal-provincial 10-year plan to manage NOx and VOCs;
   - adopt California emission standards for new vehicles;
   - establish regulations for key industrial sources of NOx and VOCs;
   - consider the use of a tradeable permits system in order to achieve emission reductions in a flexible, least-cost manner;
   - set stringent gasoline volatility controls; and
   - set national guidelines for implementation of vapour controls in gasoline marketing and distribution.

4. Explore the use of economic incentives and disincentives as mechanisms for reducing local air pollution.

5. Negotiate an agreement with the United States to deal with the transboundary flow of air pollutants, including NOx, VOCs and toxic air pollutants.

6. Support the demonstration of "clean" energy technologies in Third World countries to help in their fight against air pollution in urban centres.

7. Support research into toxic airborne substances to improve our ability to measure concentrations, and to better determine trends and impacts on the environment and human health.

8. Promote market penetration of alternative energy, particularly in the transportation sector (natural gas and methanol).

Water

Despite important achievements in federal water policy, including the 1987 Federal Water Policy statement, the Oceans Strategy and the Great Lakes and St. Lawrence River clean-up, the Government recognized in the consultation document, *A Framework for Discussion on the Environment*, that additional efforts were needed to deal with mounting concerns about the quality of water in many parts of Canada. In particular, we said there is a need for increased efforts in aquatic research and monitoring, greater support for water-saving and non-polluting technologies, and educational programs to encourage wiser water use. The Government also identified legislative gaps, including a requirement for a Drinking Water Safety Act and a Canada Oceans Act.

Although prevention is the key to achieving clean water quality objectives, the Government made a commitment to continuing our co-operative efforts with the provinces to clean up Canada's contaminatedwaterways. The Fraser River was identified as a priority.

The Government restated its commitment to two important water management principles: "polluter pays" and realistic water pricing. The latter is a necessary element of any solution to the problem of municipal water treatment and infrastructure. The Government also proposed to sponsor a national conference on water pricing.

What Participants Discussed

During the consultation process, participants drew attention to a wide range of concerns and expectations regarding the issue of water. Many of their concerns directly supported or even exceeded the options put forward for discussion in ***The Green Plan***. One of the fundamental points raised was that water is critical to the health and welfare of all organisms, including human beings, and requires conscientious stewardship.

The following issues are representative of the many concerns that were expressed.

- The availability of clean water to future generations, for drinking and multi-purpose uses.
- The recognition by all Canadians of the true economic and environmental value of water.
- The perception that existing regulations to protect water quality are not effective, not enforced, and have not kept pace with social and technical evolution.
- A greater focus on groundwater quality, including monitoring, research, and public access to valid information on the effects of contamination.
- Increased priority on marine regions with respect to environmental quality and human health.

Participants also expressed concern about specific regional issues, such as proposed and existing watershed action plans, and also the implications of certain interjurisdictional issues, such as water diversions.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To promote a national approach in the management of water resources.

Action

- Work towards a national water management strategy and the integration of water management practices.
- Develop national standards for areas such as fresh and marine water quality, drinking water guidelines, "user pay" policies.
- Improve federal-provincial co-ordination and ensure the involvement of all stakeholders (non-government organizations, industry, agencies) in water resource planning.

Objective

To ensure ecosystem maintenance and sustainable development.

Action

- Maintain uncontaminated aquatic environments and restore degraded aquatic environments using approaches consistent with the principles of sustainable development.

- Support implementation of the proposed Fraser River Action Plan, but also pay attention to other major polluted watersheds.
- Conduct environmental assessments of all major water-related projects, including the consideration of cumulative effects.
- Inventory, designate and protect Canadian wetlands.

Objective

To protect and enhance water quality, both fresh and marine.

Action

- Demonstrate leadership by developing a rational fresh and marine water-quality strategy that sets firm water-quality standards.
- Establish effluent guidelines that are technically challenging, but attainable. For example, implement higher standards for effluent disposal, with stronger enforcement by 1995.
- Work with other jurisdictions to develop goals and targets for sewage treatment, source control of toxic contaminants entering sewage systems, and incentives to meet these goals.
- Strengthen safety measures of tankers and ships, and enforce regulations on bilge pumping.
- Base funding of remediation in the Great Lakes and elsewhere on the "polluter pays" principle.

Objective

To ensure availability of water resources.

Action

- Prepare measures to reduce impacts of decreasing levels due to global warming.
- Prohibit, by federal and provincial regulations, any water diversions of major significance.

Objective

To improve monitoring of water quality and quantity.

Action

- Map the surface and subsurface quality and quantity of water over the next 25 years.
- Develop better indicators for monitoring contaminants and environmental quality.
- Regularly evaluate monitoring networks to ensure that they continue to reflect data needs.
- Maintain and expand the northern hydrological network.

Objective

To enhance water research.

Action

- Develop and implement, in partnership with other governments, the academic community, and industry, a long-term research plan for basic and applied aquatic and water-quality research.
- Improve identification of research priorities by establishing an interdisciplinary aquatic science advisory committee.

> **I was shocked to read...that Canada does not have a Drinking Water Safety Act. This should be among our "first priorities" for action.**
>
> *Russell D. Sacks*
> *Toronto, Ontario*

- Increase federal research on the chemical contamination of groundwater and provide research support for provincial groundwater resource management activities.

- Support the development and testing of water treatment, and of water-efficient technologies through research programs, federal demonstration projects, economic incentives regulations, consumer awareness programs and partnerships.

Objective

To promote water awareness and use of economic instruments.

Action

- Hold a national conference on water pricing to discuss the equitable application of economic instruments in water management.

- Encourage, through policies and educational techniques such as lectures and demonstrations appropriate pricing of all water uses, with emphasis on conservation.

- Use economic incentives to promote use of water-saving devices.

- Encourage industry-funded research through taxation policy.

Objective

To provide leadership with new legislation.

Action

- Enact a Drinking Water Safety Act that also covers bottled water, ice and household devices.

- Adopt a Canada Oceans Act with a sustainable development philosophy, thereby providing a means of responding to environmental emergencies such as oil spills.

- Pass a Clean Water Act that prohibits all discharge of persistent toxins.

- Pass legislation prohibiting water export.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Implement a co-operative action plan with the provinces to clean up major contaminated waterways in Canada, beginning with the Fraser River and its estuary.

2. Expand efforts to protect wetlands by designating them National Wildlife Areas, Migratory Bird Sanctuaries and National Parks.

3. Strengthen enforcement of standards aimed at spill prevention, including the provisions of the *Transportation of Dangerous Goods Act*, the *Canadian Environmental Protection Act*, the *Fisheries Act* and the *Canada Shipping Act*.

4. Augment fresh and marine water-quality monitoring, assessment and reporting programs and develop better indicators of environmental quality.

5. Map the surface and sub-surface quality and quantity of water within the next 25 years.

6. In co-operation with provincial and territorial governments, enhance groundwater research, monitoring and management capability.

7. Develop and implement a long-term research plan for basic and applied aquatic and water-quality research.

8. Expand monitoring and assessment activities on toxic substances in water in support of regulatory programs.

9. Sponsor a national conference on water pricing to discuss the equitable application of economic instruments in water management.

10. Through improved educational material and environmental information, enhance public awareness of water issues, including the state of marine and fresh water resources, and encourage water conservation and water quality preservation.

11. Develop nationally acceptable guidelines for water, sediment and biota for both fresh and marine ecosystems.

12. Introduce legislation to prohibit the export of water from Canada.

13. Set national standards for drinking water with the introduction of a Drinking Water Safety Act.

14. Through a Canada Oceans Act, enhance the legislative basis for adopting several key elements of the Law of the Sea Convention, including provisions to create a 200-mile "exclusive economic zone," assert Canada's interests in migratory species and stocks straddling the 200-mile limit, provide for the creation of marine protected areas, and strengthen the legislative basis for ocean science.

15. Complete a national marine environmental quality framework and produce an action plan in consultation with the provinces, territories, industry and other affected parties.

Also see suggestions cited in "Environmental Emergencies" and "Fisheries."

Water-related initiatives for conservation and more accurate water pricing on a user-pay basis are required, and must be backed up with federal research.

Ian Attridge
Toronto, Ontario

Agriculture

In the consultation document, *A Framework for Discussion on the Environment*, the Government recognized the importance of agriculture in the overall question of environmental quality. Agriculture, like some of our other renewable resource sectors, demonstrates the linkages between a healthy environment and a healthy economy. The consultation document highlighted three areas for public input to assist the Government, through Agriculture Canada, to develop a program to promote sustainable agriculture in Canada. Canadians were asked:

- How can farm producers be encouraged to adopt practices that promote soil conservation and regeneration?
- What practices should be put in place to ensure that shared resources such as surface and ground water, are not unduly degraded?
- What role can consumers play in supporting environmentally sound agriculture?

In July 1990, the Government released the report of the Federal- Provincial Agriculture Committee on Environmental Sustainability. This report originates from one of eleven task forces struck by Agriculture Canada to review Canada's agriculture policies, a process initiated in November 1989. It contains eleven main recommendations to make Canadian agriculture more environmentally sustainable. The scope of the recommendations is quite broad and involves reforming federal and provincial government policies and programs that contribute to resource base and environmental degradation; developing cost-shared research, education and incentive programs; and examining the feasibility of implementing cross compliance. ***The Green Plan*** will set out the federal actions necessary to begin implementing the policies outlined in the Committee's report.

What Participants Discussed

Participants addressed a broad spectrum of environmental, socio-economic and health issues related to agriculture. They paid considerable attention to the degradation of soil, water and other natural resources caused by inappropriate agricultural practices, and the need to develop and adopt environmentally sound practices in the pursuit of sustainable agriculture.

> **An extensive development and educational process is required to ensure that all producers, under every condition, have the management tools and attitude required to develop a sustainable food supply for Canada.**
>
> ***Alberta Conservation Tillage Society***

Commonly cited research priorities included the development of pest management options other than synthetic substances, methodologies to improve soil quality, and better livestock waste management techniques.

Many participants expressed concerns over the long-term security of the natural agricultural resource base, endangered by the continuing conversion of prime agricultural land to other uses; the possibility of major water exports; and threats to natural genetic stock. They requested that the federal government examine its policies, programs and agreements to ensure that they are not counter-productive to the goals of sustainable agriculture. There were calls for integrated or comprehensive resource management policies and programs to replace the more narrowly oriented ones that sometimes work at cross purposes and inadvertently contribute to environmental degradation.

Health concerns focused on the use of agricultural chemicals, notably pesticides. Many mentioned the risks faced by those applying the substances, and the levels of chemical residues in foodstuffs. Some called for stronger federal control over pesticide use.

The need to maintain the economic viability of the family farm was a common theme. Many participants recommended incentives for farmers to pursue sustainable practices or make allowances for other interests such as wildlife, on the premise that responsible stewardship must be rewarded. There were calls for more realistic product pricing that incorporates environmental costs. The participants also recognized the need to educate consumers in the realities of present-day farming, and to promote environmentally sound practices within the farming community. There was general consensus that greater awareness would lead to more environmentally responsible decision making on all sides.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To ensure the long-term productive capacity of natural resources for agriculture.

Action

- Co-operate with other jurisdictions to conserve prime agricultural land and protect it from conversion to other uses, through the development of national guidelines for protection and zoning of agricultural land and the consideration of agricultural capability in the disposition of "surplus" federal lands.

- Discourage water exports to ensure future supplies for agricultural use.

- Preserve the natural genetic stock of agricultural species by measures such as establishing ecological reserves in agricultural landscapes.

- Review existing federal policies, programs and agreements to ensure that they promote the conservation of natural resources for agriculture. Eliminate those that do not.

- Develop integrated federal resource management policies and programs that recognize interdependencies between and among resource sectors, such as agriculture, wildlife and forestry. Eliminate incompatibilities and conflicting objectives by using such mechanisms as a comprehensive national soil, land and water conservation policy, and a comprehensive agri-food policy that promotes national self-sufficiency in food production.

- Seek better integration and compatibility of federal and provincial agriculture programs and practices. This will ensure that different jurisdictions do not work at cross purposes.

Objective

To minimize the environmental impacts of agriculture, both on and off the farm.

Action

- Promote and fund research on sustainable agriculture, including pest control options such as biological controls, integrated pest management, and more rapidly degrading and target-specific synthetic pesticides. Other areas for research include better water-management practices, such as more efficient irrigation.

- Implement adequate environmental monitoring to detect agricultural impacts on land, water, air, wildlife and other components of the environment.

- Promote adoption of sustainable farming practices through measures such as demonstration projects. This should encourage technology transfer and provision of financial, educational and other types of support that are linked to adoption of environmentally sound practices, such as incentives to farmers making the transition to organic farming.

- Promote the adoption of integrated resource management at the farm level by providing incentives for actions such as retirement of marginal lands, establishment of buffer zones around waterbodies and conservation of wetlands.

- Subject new agricultural technologies to the environmental assessment and review process.

> **...Sustainable agriculture is much broader than organic farming or even fewer chemical inputs. It must also include the sustenance and restoration of the whole rural landscape and ecosystem, as well as socio-economic maintenance.**
>
> *Soil and Water Conservation Society: Ontario Chapter*

> **...it must be recognized that environmental constraints such as climate and sustainability have costs and we must pay them if we expect our farmers to follow sound ecological principles.**
>
> ***Township of Lavan, Ontario***

- Exert greater control over the use of agricultural pesticides, by instituting a national training and licensing program for pesticide applicators, and by developing national standards for pesticide labelling, storage and application.

- Promote non-chemical methodologies through changes in the *Federal Fertilizers Act* and the *Pest Control Products Act.*

Objective

To ensure the economic viability of the Canadian farm operation.

Action

- Encourage consumers to purchase locally produced agricultural products to help the Canadian farmer, and to reduce the necessity for more distant transport of goods, and for longer-term storage and preservation measures.

- Make research results equally available to large and small producers.

- Provide incentives that encourage diversification and self-sufficiency on the farm, and eliminate measures that do the opposite.

- Provide adequate compensation to farmers who actively accommodate other interests (for example, wildlife), or adopt sustainable farming practices at additional costs to themselves.

- Support the competitive position of the Canadian farmer by ensuring that new regulations developed under the banner of sustainable development do not hinder the farmer.

- Encourage other nations to employ environmentally sound agricultural practices and treat domestic and imported products on an equal footing; for example, prohibit importation of foreign produce treated with pesticides that are not approved for use in Canada.

- Ensure that marketing boards incorporate all costs of production, including those associated with environmental protection, when determining prices.

Objective

To provide safe, nutritious food for domestic and export markets.

Action

- Analyze existing agricultural practices for their effects on health, and consider the implications of eliminating such practices.

- Develop national standards for certifying organic produce.

- Modify food grading practices to emphasize nutritional value and absence of contaminants, while deemphasizing appearance.

- Improve detection methods for a wider variety of chemical residues and promote reductions in residue levels on foods.

- Monitor food contaminant levels more closely.

Objective

To educate and raise awareness of producers and consumers to encourage environmentally responsible actions.

Action

- Promote a conservation ethic.

- Improve the quality, availability and flow of information on agriculture through actions such as periodic reporting on "the state of Canada's agriculture"; the development of environmental indicators associated with agriculture; and the development and maintenance of national databases on natural resources and resource use.

- Develop and distribute impartial information that sensitizes consumers to the realities of the food production system and promotes environmentally sound resource management among producers. Information should include subjects such as the concept of "sustainable agriculture"; the real costs of food production; the on-and off-farm environmental impacts of poor agricultural practices; the concept of "organic" or "natural" foods; and the responsible use of pesticides and other chemicals.

- Recognize and promote farming as a profession to attract newcomers.

- Promote stronger school curriculums to raise awareness of inter-relationships between agriculture, the environment and human health.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Accelerate reform of policies and programs that contribute to resource base and environmental degradation, and re-allocate resources to support environmental sustainability.

2. Promote and fund research on better water management practices, such as more efficient irrigation.

3. Co-operate with other jurisdictions to conserve prime agricultural land. Protect its conversion to other uses, by means such as development of national guidelines for protection and zoning of agricultural land.

4. Extend the National Soil Conservation Program under federal/provincial soil and water accords.

5. Promote and fund research on pest control options such as biological controls, integrated pest management, and more rapidly degrading and target-specific synthetic pesticides.

6. Develop indicators to monitor and assess the state of the resource base and environmental quality in relation to agriculture.

7. Promote adoption of sustainable farming practices by funding a variety of measures such as on-farm technology demonstration projects, financial incentives, extension services, and education and research programs.

8. Initiate a detailed examination of the feasibility and acceptability of implementing cross-compliance measures in federal and provincial agricultural programs.

9. Provide incentives for farmers to retire marginal lands, establish buffer zones around water bodies, and protect wetlands.

10. In co-operation with the provinces, implement pesticide control measures such as a national training and licensing program for pesticide applicators, and the development of national standards for pesticide labelling, storage, and application.

> **...if we don't soon act to alter the present course of deterioration of our farmland and prevent massive encroachment by unplanned urban expansion, we will eventually become a nation that is unable to feed itself.**
>
> ***Ronald Bradford***
> ***Richmond, British Columbia***

11. Adopt the recommendations of the recently released Proposed Federal Pest Management Regulatory System. This system will:

- provide for shared responsibility for regulatory decisions between the federal ministers of Environment, Health and Welfare and Agriculture;
- encourage the development of pest management strategies that reduce risk of harm to health, safety and the environment (while optimizing pest control);
- provide for a multi-stakeholder group to advise the Government on pest management issues; and,
- include a comprehensive re-evaluation policy for older pesticides.

Forestry

If they are managed in a sustainable manner, forests can provide long-term environmental and economic benefits including wildlife habitat, carbon dioxide sinks, biological diversity, and the basic resource for Canada's largest export activity. Through the Canadian Council of Forest Ministers (CCFM), the federal and provincial governments have endorsed the concept of sustainable development in the forest sector. The recently created Forestry Canada, a federal department, has included this concept in its enabling legislation.

In the consultation document, *A Framework for Discussion on the Environment*, the issue of whether or not Canada's forests are being managed and protected in a fully sustainable manner was raised. The Government noted that improved management can raise difficult short-term trade-offs between job creation and economic growth and long-term economic and environmental benefits.

The Government asked Canadians for their views on how to improve the application of sustainable development in the forestry sector, particularly with respect to protection, use, restoration and scientific understanding of Canada's forest resources. The Government also asked Canadians how it could contribute to ensuring sustainability, while at the same time respecting provincial jurisdictions. One option suggested was to emphasize the scientific aspects of sustainable forest practices.

What Participants Discussed

In considering the overall management and protection of Canada's forest resources, participants favoured an approach to forest management that incorporates ecological factors and processes, and encourages biodiversity.

Participants felt that forests should be managed in a consistent manner across the country through national policies and guidelines based on a solid understanding of forest ecosystems, incorporation of all costs and benefits and sound management practices. They wanted assessments of the cumulative effects of a number of developments, such as pulp mills, occurring in a particular area.

They recognized that if Canada is to move toward better use of its forest resources, there is a need to improve the knowledge base upon which forest practices are founded, including the development of integrated information databases that can be used utilized to monitor the use of forest resources, and encourage improved management practices. They supported increased federal research and development in the area of forestry, giving priority to applied research that encourages an environmentally sustainable forest industry, and that examines the role of, and alternatives to, chemical pesticides in forestry management.

People also felt that in consultation with the provinces and interested groups, the Government of Canada should take the initiative in developing specific guidelines for the better development and management of a sustainable forest resource. They also wanted the federal government to take the lead in influencing other countries to adopt sustainable forestry principles and practices.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To improve national planning and policy co-ordination.

Action

- Establish, by 1995, a national plan for long-term forest management, including guidelines for public involvement, for protection and enhancement of wildlife and aquatic resources, and for sustainable harvest practices and emission levels. The guidelines should be reviewed every five years by governments, the public and industry, and could be developed at the International Sustainable Development Institute.

- Develop national standards and objectives for forestry, through consultation with stakeholders and federal-provincial councils such as the Canadian Council of Forestry Ministers (CCFM) and the Canadian Council of Ministers of Environment (CCME). These policies should be endorsed at a First Ministers' Conference.

- Review, approve and implement, by 1995, the existing National Forestry Sector Strategy developed in 1987 by the CCFM.
- Establish provincial forestry advisory committees to enable adequate public involvement in long-term forest planning.
- Encourage an efficient approach to compliance and enforcement with an emphasis on a "one-window" approach to the application of regulations.

Objective

To promote sustainable forestry practices.

Action

- Use re-negotiated Forestry Regional Development Agreements to promote sustainable forestry, including support for development of secondary industries; for development of a forest resource inventory as a basis for allowable annual cut calculations; for testing of alternative harvest practices; for research into forest bio-diversity (including animal species) and for forest management plans that take into consideration economic and social values of old-growth forests.
- Establish a national forest demonstration program to promote the ecosystem management approach to sustainable forestry. "Old-growth" forest reserves representing each eco-region and the range of diversity in forest lands should be established for education and research.
- Promote partnerships for environmentally sound reforestation programs and practices and encourage urban forestry management programs. Set targets for reforestation, for example, to reforest all backlog areas by the year 2000 or to reforest up to three million hectares of degraded land by the year 2000.
- Create a national policy to ensure that 20 percent more trees are planted than cut each year. Reforestation program costs could be recovered from stumpage fees.
- Establish a "Forestry Impact Assessment Process" (like the Environmental Assessment Review Process) to monitor and evaluate, on an ongoing basis, the impacts of forestry and forest industry developments such as pulp mills. This should be done by an independent body and should involve all stakeholders at the early stages of project development. The process should include consensus development and conflict resolution, particularly where consumptive and non-consumptive uses must be balanced.
- Diversify the forest industry with an increased emphasis on value-added activities, and implement job retraining and economic adjustment assistance where there are disruptions associated with sustainable development initiatives.
- Establish a moratorium on high-altitude logging and high-latitude steep-slope forest lands until strategies are established for forest regeneration in these areas.
- Address, with the government of the Northwest Territories, the issue of whether forestry is a sustainable activity in the Territories.
- Provide incentives to industry to conduct increased research and development on sound alternative forest management practices; on reforestation; on recycling of used paper products and on development of new uses for native tree species. This could be funded through a levy on industry amounting to 5 percent of the annual export value of forest products.

Wildlife and forestry. This is an area in which management decisions are frequently made without balanced consideration of the two interrelated resources. Commonly, forestry practices are followed which are not compatible with the health and well-being of wildlife populations. Decision-making should aim at an integrated approach.

The Natural History Society of Newfoundland and Labrador

To retain a continuity of old-growth forests requires management, not preservation. Old-growth forests can be managed differently, by changing the harvesting methods and increasing rotation ages for certain species on certain sites.

Northwestern Ontario Section
Canadian Institute of Forestry

- Use economic incentives, such as accelerated capital cost allowance, to promote the use of environmentally friendly facilities; reforestation and stand-tending in harmony with ecological principles; dioxin-free pulp production; and achievement or improvement of pollution control standards.

- Initiate long-term, cost-shared funding with woodlot owners who practice sustainable forest management.

Objective

To improve the knowledge base upon which forest practices are founded.

Action

- Enact legislation by 1990 to give Forestry Canada a strong conservation mandate and responsibility for increasing scientific research on forest ecology and wildlife management.

- Complete the Canada Ecological Land Classification System, with the participation of Forestry Canada and the provinces.

- Prepare by 1995, then maintain, a nation-wide contemporary ecological inventory of forest lands that would expand the existing geographical information system and integrate other existing databases. This could be used in environmental assessments, economic impact analysis and forest management formulation, and funded on a user-pay basis or through a special tax.

- Initiate and support research into:
  - the development of products that would reduce the need for selective harvesting;
  - integrated forest use and the associated economic and sociological costs and benefits;
  - the long-term effects of woodland operation practices, to ensure that these practices do not impair the productivity of the land;
  - the effects on forest resources of external stresses such as acid rain, global warming and pollution;
  - alternatives to pesticides;
  - the reduction of pollution associated with the forestry industry; and
  - alternatives to slash burning.

Objective

To demonstrate federal government leadership at home and abroad.

Action

- Set an example by using recycled paper and non-toxic, recyclable inks.

- Implement sustainable forestry practices on forest lands over which the federal government has direct responsibility.

- Implement adequate monitoring of reforestation and other forest management programs that involve federal funds.

- Include a system of natural resource accounting in Forestry Canada's Annual Report to Parliament on the State of the Forest (Bill C-29).

- Encourage other countries to practice sustainable forestry through tariffs, exotic wood import restrictions and foreign aid limitations.

- Develop international protocols for scientific analysis and testing for regulatory purposes, and promote projects that support sustainable development in developing countries.

Objective

To improve Canadians' understanding of forest management issues.

Action

- Educate the public on costs of over-consumption of a wide range of forest products and the value of a "no-waste" philosophy.
- Establish a nationally celebrated "arbour day" to focus attention on forest management.
- Publish an annual "state of the forests" report and news of successful sustainable forestry projects.
- Promote a Canadian forest ethic by encouraging tree planting and forest management in urban and rural areas.
- Continue education programs on the latest technologies for professionals and technical staff.
- Establish, in partnership with the provinces and the industry, a standardized format for the collection and dissemination of information by Forestry Canada.

Suggestions for Further Consideration

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1. Renew the forestry agreements with the provinces, using the funds provided to support national objectives of environmental quality and sustainable development, including reforestation of insufficiently restocked areas and careful logging of sensitive lands.

2. Develop new programs to support the scientific basis of sustainable forest and forest industry practices, including research into improved means of pest control; the relation of the forest to global warming; improved understanding of forest ecosystems; preservation of genetic diversity of forest species; and environmentally sound harvesting and regeneration practices.

> **We need to embark on a massive tree-planting campaign. While we have many forests in Canada, many areas that have been harvested have not been properly replanted and many urban areas could use many more trees. This would be an investment in our future.**
>
> ***Sandy Denton***
> ***Calgary, Alberta***

3. In conjunction with the provinces and private woodlot owners, develop a program to establish working demonstration forests that practice sustainable forestry, including integrated pest management, selective harvesting, and careful road building and multiple use.

4. Manage all forests under federal jurisdiction on a sustainable, multiple-user basis: sustainable timber and fibre production, wildlife habitat, and recreational use.

5. Increase resources for fire protection and prevention activities, including more research and development and increased field activities on federal lands.

6. By 1995, renew and implement, through the Canadian Council of Forest Ministers, the existing National Forest Sector Strategy. Incorporate the principles of sustainable forestry management.

7. In co-operation with the provinces, establish a network of ecological reserves, including "old-growth" forests that represent each eco-region.

8. In co-operation with the provinces and the private sector, implement job retraining and economic adjustment assistance where there are disruptions associated with sustainable forestry initiatives.

9. By 1995, complete the Canada Ecological Land Classification System, with the participation of the provinces.

10. Produce an annual "State of the Forest Report" including information on timber inventories, reforestation and other forest management practices.

11. Promote projects that support sustainable forestry in developing countries.

12. Promote a Canadian forest ethic by establishing a nationally celebrated "arbour day" and encourage tree planting and forest management throughout Canada.

13. In consultation with affected stakeholders, develop a national forest sector strategy founded on the principle of sustainable development.

14. To help combat global warming, develop and support a Canadian reforestation program for urban and rural areas.

15. Increase support for reforestation in developing countries.

Fisheries

The Government's consultation document, *A Framework for Discussion on the Environment*, took an approach consistent with ongoing federal programs and policies, including the 1987 Oceans Strategy and the 1986 Policy for the Management of Fish Habitat. In the document, the Government called for a response strategy based on increased regulatory and enforcement action, international diplomacy, greater science effort, innovations in fisheries management, and development of environmentally sustainable economic opportunities.

The consultation document also identified the need for legislative measures to protect and preserve the marine environment through a Canada Oceans Act, and promised amendments to the *Fisheries Act* to increase substantially the penalties for illegal domestic fishing and for destruction of fish habitat. These amendments have now been tabled in the House of Commons. The Government also asked Canadians a series of questions concerning actions to enhance the sustainable development of Canada's coastal and inland fisheries, including regulatory measures and ocean science research.

What Participants Discussed

Participants agreed that the threats to fish stocks and to their habitat must be dealt with from a national and international perspective. Major concerns included the lack of effective regulation of fishing outside Canada's 200-mile fishing zone, the appropriate scale of commercial fisheries, the environmental impacts of fishing on fish habitat and non-target species, water-quality problems in coastal areas (for example, estuaries), the need for more research of fish habitat, and the scientific management of declining fish stocks. They also voiced concern about the need to achieve a better balance in the relative priority assigned to commercial versus sport fisheries, and the privatization of fisheries surveillance and enforcement.

These issues engendered a range of expectations, including the need to preserve endangered species and safeguard their diversity; the need to protect and preserve the in-shore fishery from, for example, harm to habitat by dragger fleet; and the need to protect salmon rivers. Participants generally felt that Canada must take a stronger international role in stopping environmentally unfriendly practices in the fishing industry, such as driftnet fishing, and that more fisheries research is required in areas such as aquaculture technologies.

> **Human beings have found scapegoats in other species to provide us with some leeway in accepting culpability for the decline of the fisheries. But lamprey did not take the last lake trout, we did. And seals will not take the last cod, we will.**
>
> ***The Institute for Environmental Policy and Stewardship***
> ***Guelph, Ontario***

They also urged the federal government to provide needed leadership in the co-ordination of fisheries and fish habitat management with provincial governments and with the many stakeholders across the nation.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To play a greater international role in the protection of fisheries.

Action

- Ratify the Law of the Sea.
- Protect fish stocks and reduce overfishing through the negotiation of stronger international agreements.
- Provide leadership and play a strong world role in stopping ocean dumping, driftnet fishing and whal ing. Also consider the adoption of trade sanctions against countries that practice such habits.
- Promote the establishment of an effective international body to better regulate high-seas fisheries.

Objective

To expand science and technology to ensure sustainable development of aquatic resources.

Action

- Improve fishing technology to limit or avoid incidental catches.
- Expand fisheries concerns beyond economically important species to include fishing communities.
- Assume a leadership role and assist in the transfer of technologies developed in other aquaculture countries (perhaps establish an aquaculture division in the Department of Fisheries and Oceans).
- Undertake research on the biological carrying capacity of aquaculture areas and on the antibiotics, pesticides, and fungicides used in the aquaculture industry, in order to better understand the effects on the environment and on human health.
- Fund research on fish inventories and long-term ecological studies, and provide information on the effect of driftnet fishing on the populations of marine ecosystems.
- Initiate research into improving tanker design to reduce the chances of accidental spills of oil and other harmful substances.

Objective

To provide legislation that promotes and regulates the protection and restoration of fish habitat.

Action

- Ensure that sustainable development is the goal of all fisheries resource management, including the proposed Canada Oceans Act, and protect spawning areas of offshore fish and shellfish.
- Strictly enforce the *Canada Shipping Act* and put more stringent legislation in place to end the chronic, intentional discharge of tanker cargo holds and bilges.
- Strictly enforce the *Fisheries Act* and allocate resources to the enforcement.
- Review and improve the *Fisheries Act* to regulate the alteration of water bodies and enable a more proactive and integrated resource management approach to the protection of fisheries habitat.
- Establish by 1991, a 200-mile coastal "exclusive economic zone" to improve Canada's management of living and non-living resources, including the establishment by the year 2000 of a network of marine protected areas.

Objective

To implement and fund, in co-operation with provincial governments, policies and programs to enhance fish habitat and sustainable fisheries.

Action

- Effectively implement the federal government's policy of "no net loss of fish habitat" (Department of Fisheries and Ocean's Fish Habitat Management Policy).
- Initiate programs to rehabilitate fish spawning grounds that have been damaged through forestry, hydro schemes, agriculture, etc.
- Provide better co-ordination with provincial governments, possibly through the establishment of a single national board or agency, to protect aquatic habitat, preserve fish stocks and determine the relative priority of commercial and sport fisheries.

Aquaculture should not be seen as an answer for collapsing traditional fish stocks. It is not a renewable resource, as a well-managed fishery could be, but a manufactured product that depends on nutrients from the traditional wild fish fishery.

Beth Buerkle
St. Andrews, New Brunswick

- Provide additional funding to the salmon enhancement program.

- Exert market pressures, such as import restrictions and labelling requirements to discourage the purchase of fish products obtained through driftnetting by countries not participating in international agreements.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Press for the adoption of internationally binding and enforceable rules to ensure compliance with the conservation and management measures of the Northwest Atlantic Fisheries Organization (NAFO).

2. Increase monitoring and research into the pollution of fish and fish habitats from toxic chemicals and contaminants, in order to better understand the environmental and human health effects and to provide a sound basis for further control measures.

3. Support studies on fish populations, their ecosystems and the impact of environment factors, including climate change.

4. Strengthen enforcement of the fish habitat management provisions of the *Fisheries Act*.

5. Improve co-ordination with provincial governments to ensure effective and consistent management of the fisheries, and protection of fish habitat in Canada.

6. Through a Canada Oceans Act, enhance the legislative basis for adopting several key elements of the Law of the Sea Convention, including provisions to create a 200-mile "exclusive economic zone," assert Canada's interests in migratory species and stocks straddling the 200-mile limit, provide for the creation of marine protected areas, and strengthen the legislative basis for ocean science.

7. Initiate consultations with the fishing industry and other interested parties on the use of new and innovative fisheries management mechanisms, such as extending individual quotas to allow transfers among licence holders.

8. As part of a comprehensive plan to clean up the Fraser River, initiate a program to enhance current efforts to increase fishery productivity, particularly salmon, through habitat restoration and augmentation; implement a river basin resource management plan, and expand scientific research.

9. Take concerted action on persistent plastic debris, including lost and abandoned fishing gear, and address its impacts in both fresh and marine waters.

Also see suggestions cited in "Water."

> **Similar to agriculture, the fishery will improve in direct proportion to the improvement of the overall environment (especially water pollution).**
>
> ***Tony Tjan***
> ***St. John's, Newfoundland***

National Parks and Historic Sites

The Government's long-term goal, as articulated in the consultation document, is to represent each of Canada's natural regions and major historic themes in the system of parks and national historic sites. In the consultation document, *A Framework for Discussion on the Environment*, the Government proposed a timetable to complete the system: establish at least five new parks by 1995, and complete the entire land-based park system by the year 2000; establish three new marine parks by 1995; and, commemorate seven key historic themes by 1995.

To deal with the many pressing parks issues, Canadians were asked for their views on setting priorities. For example, Canadians were asked about the priority for maintaining levels of service to the public in new and existing parks, and for protecting natural and cultural resources. Canadians were also asked in the consultation document if there were other priorities, such as the expansion of interpretation programs, and whether these would effectively promote environmental awareness. Finally, given the reality of budget constraints, the Government asked Canadians to generate innovative ideas for financing new and existing parks.

What Participants Discussed

Participants wanted action to protect Canada's ecological and cultural heritage. The message was one of urgency: if we fail to take action now, the opportunity to protect these areas will be lost.

Participants asked that the federal government take action to protect "endangered spaces" in three ways:

- By completing the federal systems' plans for protecting natural and cultural heritage;
- By working with other levels of government to provide a network of parks and protected areas; and
- By working in partnership with the private sector, non-government organizations (NGOs) and individuals to promote stewardship and protect habitat on other lands.

Protecting small "islands" amid a sea of development was viewed as insufficient. Participants called for a network of "protected areas" that will provide sufficient natural habitat to ensure bio-diversity. Many participants wanted at least 12 percent of Canada, representative of its regions and habitats, to be allocated for parks and protected areas. However, some industries expressed concerns about an "unfinishable agenda" for protected areas and supported greater use of a multiple land-use concept.

Participants supported the notion of expanding interpretative programs to promote environmental awareness. In addition, they provided several suggestions for financing new and existing parks.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To act immediately to protect unique and representative examples of Canada's natural and cultural heritage and to develop a national action plan to meet this commitment.

Action

- Prepare by 1991, an action plan for the completion of park and site systems that identifies all candidate areas for park or site status; provides for the place ment of a community liaison officer within each candidate region; establishes a task force of all stakeholder groups to guide the park establishment process; and provide the human and financial resources required. Complete the gathering of data for the delineation of protected areas and action to protect these areas should proceed recognizing the limitations of the data.
- Complete the terrestrial national parks system by the year 2000.
- Create at least five new national parks (or park reserves) by 1995 with priority given to: the North, endangered areas, eco-regions not currently represented and pristine wilderness areas.
- Give priority to including the entire ecosystem within the park boundary.
- Establish a multi-stakeholder task force to determine the acceptable area for key wildlife species and ecosystems.

- Create at least three new marine parks by 1995, including adequate protection of the foreshore, protect at least 50 percent of the remainder by 2000 and complete the marine parks system by 2010.

- Give priority to research of marine regions and complete the background research for 75 percent of marine regions by 1995.

- Commemorate seven key historic themes by 1995 and complete the representation of all the historic themes by 2000.

- Give priority to the commemoration of native themes, with extensive consultation and input from native peoples by assisting them in producing an inventory of sacred sites by 1992. Provide funding so that native peoples can document traditional knowledge, land-use and conservation practices and language; and enact legislation requiring that aboriginal artefacts, including burial remains, be managed by aboriginal peoples as soon as possible after their discovery.

- Strengthen the role of the Federal Heritage Buildings Review Office (FHBRO) in assessing heritage properties, and extend its mandate to include Crown corporations. All federally owned and regulated heritage buildings should be protected by statute.

- Establish a policy that requires federal departments and Crown corporations to renovate and restore existing buildings, before authorizing the construction of new buildings.

- Place a moratorium on development in all potential park areas, to avoid deterioration prior to designation.

- Undertake a comprehensive inventory of all resources in proposed park areas prior to designation, so that the trade-offs are fully understood. Consult with industry prior to selecting national parks, compensate industry at full market value for any loss of opportunity.

- Use both economic and other criteria when assessing park values. While the economic value of parks is significant (sustainable tourism, regional economic activity), the intrinsic value of natural ecosystems, scientific values (such as baseline research and genetic integrity) must be fully accounted.

> **All Canadians should be aware of the value and role of national parks, whether they visit them or not.**
>
> *Jenny L. Feick*
> *Calgary, Alberta*

- Include progress on completing the federal systems plans in the State of the Parks Report to Parliament and allow NGOs to perform an audit of this report.

- Fund the development and maintenance of an accessible national information system database on natural and cultural resources, using a common inventory and classification procedure that includes priority ranking. Integrate the Canadian Inventory of Historic Building (CIHB) and the Canadian Heritage Information Network (CHIN) databases.

Objective

To provide a network of parks and other protected areas that will provide sufficient habitat to maintain biodiversity.

Action

- Develop a national strategy, with extensive stakeholder input, for creating a network of protected areas that includes national, provincial, territorial and municipal parks, wildlife areas, migratory bird sanctuaries, ecological reserves, tribal parks, protected marine areas and other legislated protective mechanisms.

- Hold annual meetings of federal and provincial ministers responsible for parks to determine how this national strategy will be implemented.
  - Priority should be given to natural regions not yet represented and to natural regions crossing political boundaries.
  - Jurisdictions must be clarified to eliminate overlap.
  - Use federal/provincial agreements to support this effort.
  - Encourage provinces to complete parks systems plans.

- Observe, in the strategy, the principles of conservation biology, including minimum critical size, minimum critical populations, the use of buffer zones and provision of connecting corridors for migration,

- Protect at least 12 percent of Canada, representative of its regions and habitats, consistent with the recommendations of the report of the Brundtland Commission and the Canadian Wilderness Charter. Some suggested that 12 percent of each eco-region should be protected, and that the federal contribution to this goal should be 4 percent of each province.

- Use the State of the Environment reports to indicate progress, by all jurisdictions, towards completing the network of protected areas and meeting the 12 percent target.

- Expand the Canadian Heritage Rivers System and encourage all provinces to become signatories.

- Use the Canadian Heritage Lands designation, as proposed in *Our Parks - Vision for the 21st Century* to protect representative natural ecosystems, regard less of land ownership.

- Dedicate abandoned railway lines as "green corridors" and encourage municipalities and provinces to acquire and manage adjacent lands as wildlife habitat.

- Enact and implement legislation to protect "pocket wilderness," as in British Columbia; create a network of protected marine areas under the proposed Canada Oceans Act; and resume the establishment of national wildlife areas and migratory bird sanctuaries under the *Canada Wildlife Act*.

- Co-ordinate federal and provincial efforts to protect cultural heritage.

- Promote international conservation efforts by:
    - encouraging the creation of a world park Antarctic to limit resource exploration;
    - assisting other countries in developing systems of protected areas;
    - using the Canadian International Institute for Sustainable Development to promote Canada's role in international system of protected areas;
    - funding heritage protection projects in developing countries;
    - ensuring all funding of international projects is consistent with the World Conservation Strategy; and
    - joining the World Hemisphere Convention for the Protection of Natural Areas and Wildlife.

Objective

To encourage Canadians to become more involved in the protection, planning and management of their natural and cultural heritage.

Action

- Encourage stewardship efforts by individuals, corporations, native groups and others to protect habitat through such measures as the Canadian Landmarks Program; the proposed "Canadian heritagelands"; ecological reserves on leasehold land; and co-operative management of non-protected areas using the Biosphere Reserve Model.

- Establish at least one national landmark in each of five regions of the National Parks Service by 1995.

- Co-operate with private entrepreneurs for the provision of commercial visitor services adjacent to national parks and national historic sites.

- Settle land claims, setting aside national parks and national historic sites through the land claims process, and reach co-management agreements for these areas.

- Involve aboriginal peoples in joint management of national parks, especially wildlife management, and in the provision of more aboriginal cultural and historic interpretive information in parks and sites.

- Open up the proceedings of the Historic Sites and Monuments Board to meaningful public input and exchange.

- Encourage community involvement in heritage protection by enshrining public consultation in parks legislation; consulting with communities before determining commemorative strategies; encouraging compatible economic development in relation to heritage protection; involving communities and user groups in research; and encouraging community based preservation, through ecological museums and heritage landscapes.

With over 25 million visitors each year, National Parks are a tremendous vehicle to educate visitors about wildlife conservation and a variety of other environmental issues.

Canadian Wildlife Federation

Objective

To establish protection of ecological integrity as the priority in all park management decisions and extend co-operative management efforts beyond park boundaries.

Action

- Use the ecosystem approach as the basis for all planning and management of natural areas.
- Use zoning appropriate to the preservation goal by closing some areas of parks to protect natural and cultural resources; creating ecological reserves within parks; and creating legislated wilderness areas within parks.
- Use the "limits of acceptable change" management philosophy to define acceptable activities in parks, and permit only those visitor activities that are compatible with park purposes or zoning.
- Visitor services should not necessarily reflect demand; as preservation must take precedence over development where conflict occurs.
- Respect the preservation and conservation mandate in managing commercial activities, services and transportation corridors in parks.
- Permit traditional activities, such as native hunting and trapping in parks and reflect these in the interpretative themes.
- Use the Biosphere Reserve concept to emphasize boundary delineation based on natural or cultural features; integrate protected area objectives with those of adjacent landowners; create local advisory committees to identify and deal with concerns, set objectives, promote park/landowner partnerships, support joint research, etc.; and prepare management plans for buffer zones through extensive consultation with stakeholders.

Objective

To expand interpretation programs to highlight environmental issues and to promote environmental awareness.

Action

- Use parks as an important part of teaching the values of conservation to visitors. Make interpretative programs a central component of park and site management plans.
- Increase the budget for park and site interpretative programs by 10 percent per annum for the next five years.
- Make sure that the provision of environmental interpretation does not detract from existing park and site interpretation programs.
- Reestablish the interpretative programs of the Canadian Wildlife Service by reopening and staffing existing centres and opening new centres.
- Work with provincial departments of education to establish formal environmental and heritage education programs in national parks and national historic sites.
- Increase effort on interpretation outreach programs by working with zoos, aquariums, pioneer parks and art centres to establish joint programming; linking with the CBC and National Film Board; initiating a provincial/national/international program for the exchange of heritage education material by 1991; and establishing pilot environmental education centres in or adjacent to national parks by 1995, including one in the North.

Objective

To examine innovative financing mechanisms for the acquisition of new parks, sites and protected areas, and for reducing the cost of park operations.

Action

- Give first priority to protection in new parks. The development of visitor services, while important for providing a learning experience, is secondary and can come later as finances permit.

- Allocate 5 percent of the Canadian Parks Service budget to new parks (currently 1 percent).

- Provide tax incentives for the maintenance, "reuse" and rehabilitation of "as-built" heritage sites.

- Consider new sources of funding such as:
  - dedicated "green taxes" on recreational equipment, a "carbon tax", or a lottery;
  - donations from visitors;
  - giving national parks a charitable designation, and providing tax deductions to anyone who invests in parks;
  - increasing user fees and licence fees for commercial operators;
  - issuing special coin or stamp series;
  - selling trust funds for park acquisition;
  - inviting Canadians to "purchase" an acre of park in trust; and
  - using the Western Diversification Fund to establish western national parks.

- Consider inexpensive methods of protecting non-park areas such as tax incentives for donating private lands for eco-reserves or heritage sites; and implement the "Canadian Landmarks Program," with tax breaks and incentives.

- Reduce operational costs in parks by:
  - using volunteers for park management, as with U.S. Environmental Corps;
  - assisting groups such as the Alpine Club in providing back-country facilities at little or no cost to the Government;
  - using the private sector to offer visitor services;
  - using low maintenance options, plant native perennials rather than expensive annuals to decorate park entrances;
  - using limited hunting programs to cull unwanted populations, and charging a fee for the licence;
  - streamlining processes and reducing the number of administrators.

> **For about 10 years I have been conducting field trips to Kedge Park (Kejimkujik National Park)... It has made science truly real and exciting, integrating the science concepts in a real science classroom - the great outdoors.**
>
> *Churchill Page*
> *Digby Regional High School, Nova Scotia*

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Develop a long-term, co-operative national strategy to create a network of protected areas that includes national, provincial, and municipal parks, sanctuaries, and ecological reserves, with the goal of protecting approximately 12 percent of Canada.

2. Develop or initiate a program to protect "pocket wilderness" such as old-growth forests, significant wetlands and native grasslands, and resume the establishment of natural wildlife areas and migratory bird sanctuaries under the *Canada Wildlife Act*.

3. Initiate a program to dedicate abandoned railway lines as "green corridors," and encourage municipalities and provinces to acquire and manage adjacent lands as protected areas.

4. In co-operation with the provinces, develop a land stewardship program to provide economic incentives to encourage private owners of land to preserve them in their natural state.

5. Prepare an action plan to ensure the completion of the terrestrial national parks system by 2000, with priority given to preservation over provision of visitor services. Basic visitor services can be developed in new parks and enhanced later as finances permit.

6. Create at least five new parks by 1995, with priority on the North, unrepresented eco-regions, pristine wilderness, and the preservation of entire ecosystems. The major gaps in the parks system are located in the Northwest Territories, British Columbia, Manitoba, Quebec and Labrador.

7. Create three new marine parks by 1995, including adequate protection of the foreshore. Protect 50 percent of the remainder by 2000, and complete the marine parks system by 2010.

8. Protect and preserve the integrity of existing parks and historic sites by attaching a high priority to:
- timely maintenance of existing facilities and infrastructure;
- vigorous enforcement of poaching laws;
- provision of quality facilities to support visitors (where needed to reduce damage through overuse); and,
- development of buffer zones to protect sensitive eco-systems.

9. Provide additional funding for existing cost-shared and co-operative heritage conservation programs, as well as for the Canadian Heritage Rivers System. All provinces will be encouraged to participate.

10. Commemorate seven key historic themes by 1995, and commemorate an additional eight historic themes by 2000. The first priority should be to commemorate native themes.

11. Expand the environmental interpretation and education programs at national parks and historic sites.

12. Expand research efforts to support the parks system, with priority on marine science, island biogeography, transboundary impacts, biodiversity, and special environments such as the Arctic.

13. Include progress on completing the federal park systems in the biannual State of the Parks Report to Parliament.

14. Provide resources to bring existing collections of artefacts and historic objects to an acceptable level of preservation and to provide for their long-term management.

15. Develop a National Volunteer Archaeology Program to provide an opportunity for the public to become actively involved in, and sensitive to, Canada's cultural heritage.

16. Consider innovative ways to finance capital expenditures on new parks, and necessary expenditures in existing parks, through mechanisms such as tax incentives for private-sector donations (land, money) or charitable foundations; increased user and commercial licence fees; special coin or stamp programs, and trust funds.

17. Develop ways to reduce operating costs. Examples include using more volunteers; assisting non-governmental organizations and clubs in providing wilderness facilities; using the private sector to provide visitor services; and, reducing the number of administrators.

Also see suggestions cited in "Wildlife."

The "protected areas" add significantly to the quality of life and contribute important economic benefits through environmentally sensitive tourism, education, watershed protection and conservation of bio-diversity.

It is estimated that the network of protected areas must be completed within the next decade or it will never be accomplished.

Federation of Saskatchewan Indian Nations

Wildlife

Wildlife is an essential element in ensuring the continued productivity and diversity of ecosystems. Accordingly, in the consultation document, ***A Framework for Discussion on the Environment***, the Government of Canada made the commitment to maintain and enhance wildlife populations for the benefit of all Canadians. The Government asked Canadians for their views on ways to achieve these goals. Amongst the options Canadians were asked to consider were: implementing a program to protect wildlife populations and their habitat; networks of co-operative research centres and wildlife laboratories; a Wild Animal and Plant Protection Act to control traffic in endangered wildlife, and an Endangered Species Act to protect endangered species in Canada.

Wildlife concerns were also identified in the context of other issues in the consultation document. For example, the importance of the linkages between wildlife habitat and Canada's agriculture and forestry sectors was highlighted. Canadians were asked about ways to move Canada towards the sustainable development of its forests, a concept that recognizes the importance of forests for uses such as wildlife habitat and recreation as well as for timber and fibre production. The "Agriculture" section of the consultation document asked Canadians to express their views on the priority of sustainable agriculture, which encompasses wildlife and wildlife habitat issues.

The Government is currently collaborating with the provinces and territories to develop a Wildlife Policy for Canada. The goal of this policy, to maintain and enhance the health and diversity of Canada's wildlife, is central to ***The Green Plan***.

What Participants Discussed

Participants responded enthusiastically to wildlife issues. Many defined wildlife to include both flora and fauna because of the importance of wild plants and the animal kingdom in the ecosystem. Many expressed the view that wildlife should be recognized as a renewable resource and would be a good example of sustainable development in action. Yet many were also concerned about the intrinsic value of protecting the entire wildlife community and its habitat in its own right. Among other things, this more "biocentric" view recognized that impacts on the health of wildlife and fish resources are often indicators of impacts on human health.

Participants expressed concern over such specific issues as insufficient co-ordination of environmental assessments between the federal and provincial governments; inadequate integration of forest, fish and wildlife values; the threats to migratory and endangered species; the misunderstanding of native concerns about wildlife; the impact of contaminants in the ecosystem; habitat loss and fragmentation; and the lack of adequate facilities and funding for wildlife monitoring and research. Many expected that these and other issues would be addressed soon through the exercise of federal leadership.

Participants anticipated actions that would include the negotiation of international treaties to protect migratory species; speedy passage of proposed endangered wildlife legislation; development of a national wildlife policy; and the initiation of various programs to protect threatened wildlife populations and habitat. Most also believed that the restoration of already depleted or damaged habitat and ecosystems should be based on improved knowledge obtained through additional scientific research.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To provide federal leadership in wildlife policy and program development.

Action

- Complete the national wildlife policy that is currently under discussion between governments and stakeholders.
- Develop a policy for transplantations of populations of native and non-native wildlife, such as bison.
- Define the roles and responsibilities of federal, provincial and territorial governments; encourage private-sector co-operation; and foster partnerships with non-governmental wildlife organizations.
- Initiate a co-operative federal/provincial approach by negotiating wildlife habitat management and conservation agreements.

Objective

To maintain and expand Canada's international role in the protection of wildlife and wildlife habitat.

Action

- Participate actively in international efforts to maintain bio-diversity, including the negotiation of a global convention.
- Expand bilateral treaties dealing with migratory species to include nations that share conservation responsibilities with Canada, such as Latin American countries and Greenland.
- Ensure that Canadian aid to other countries is used in environmentally friendly ways, such as making funding available for habitat to support "our" migratory species.
- Ensure the speedy passage of legislation to protect and conserve wild animals and plants subject to international trade, in support of the Convention on International Trade in Endangered Species (CITIES).
- Display leadership in the international community by strengthening enforcement and penalties for illegal commercial hunting under the *Migratory Birds Convention Act*.
- Establish international co-operation to manage migratory species with special habitat requirements, such as the Porcupine caribou herd.

Objective

To protect and enhance wildlife habitat, including sustainable development of the resource and maintenance of the diversity of species.

Action

- Promote a national policy of "no net loss of wildlife habitat."
- Accelerate the creation of protected areas, including more wilderness areas, marine parks and ecological reserves, to address areas of sensitive habitat, especially in the North.

> **The term "wildlife" is not defined. The Government agrees with the draft (January 1990) Wildlife Policy for Canada, that wildlife must be defined broadly to include "any species of wild animal or plant." Otherwise, it will continue to include only those species the Government and bureaucrats of the day wish to be included.**
>
> ***The Ottawa Field-Naturalists' Club***

- Promote the incorporation of wildlife habitat considerations in the management of other sectors such as forestry, minerals, and agriculture.
- Maintain healthy habitats and restore depleted habitats, on the basis of a sound understanding of the productivity and diversity of ecosystems.
- Consult with indigenous peoples and their communities to develop meaningful and effective roles in the protection of habitat, including monitoring and enforcement.
- Create tax incentives for landowners and corporations that provide wildlife-friendly habitats.
- Promote habitat-friendly products and activities, such as the elimination of plastic collars on canned beverages, and consider how to restrict use of all-terrain vehicles to reduce impacts on wildlife habitat.

Objective

To protect endangered species in Canada through legislation and remedial programs.

Action

- Enact endangered species legislation in consultation with the provinces to ensure that all species are covered, including marine animals.
- Provide for implementation of recovery plans to increase populations of endangered species placed on the list.

- Protect flora as well as fauna.

- Pay more attention to restoration of habitat in the re-introduction of threatened species.

Objective

To increase research and monitoring of wildlife populations and habitats to improve baseline data, promote the health of species, and enhance our understanding of ecosystems.

Action

- Undertake more research on habitat requirements, and more applied research to determine the impacts of development and resource management on wildlife populations.

- Complete scientific studies that identify the location, size and importance of threatened ecological areas, such as grasslands and old growth forests.

- Establish wildlife disease and other co-operative research centres in Canada.

- Establish a more systematic approach to the bio-monitoring of wildlife and ecosystems for toxins.

- Consider the establishment of a water advisory group, with broad representation from research institutions and citizens. This would ensure that the results of research related to wildlife are fully considered in the decision-making process.

Objective

To enhance public awareness of wildlife issues.

Action

- Increase wildlife education in the school systems and provide more interpretative programs.

- Promote mandatory educational programs for hunters and trappers to discourage "traditional" illegal spring waterfowl hunting.

- Encourage public participation in recovery plans such as re-introduction of eider ducks.

- Improve publicity about the economic returns of ecological and heritage resources, including recreational and intrinsic values.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Establish regional wildlife research networks at universities and a comprehensive research strategy in co-operation with the provinces, the private sector and non-governmental organizations.

2. Expand research capability on the effects of toxic substances on wildlife including establishment of a co-operative national network of expertise on wildlife disease and the effects of toxic substances on wildlife at veterinary colleges across Canada.

3. Develop and implement recovery plans for 40 of the most highly endangered species in Canada over the next five years.

4. Pass a new Wild Animal and Plant Protection Act to control the illegal trafficking of wildlife into and out of Canada.

5. Implement the Wildlife Policy for Canada through the Wildlife Ministers' Council.

6. Enact endangered species legislation in consultation with the provinces, ensuring that all species are covered, including marine animals and plants.

7. Create economic incentives for landowners and corporations to provide wildlife habitat.

8. Initiate habitat and population research into non-game species to respond to environmental assessment and "State of the Environment" needs.

9. Establish a National Wildlife Habitat Network in partnership with the provinces and non-government organizations.

10. Begin discussions on strengthening international habitat conservation arrangements with countries that share our migratory species.

11. Promote the incorporation of wildlife habitat considerations in the management of other sectors, such as forestry, mining and agriculture.

12. Increase the commitment to wildlife education, including more in-school education; mandatory hunter and trapper education programs to discourage illegal hunting; and public participation in wildlife recovery plans.

13. Participate in international negotiations for a global convention on bio-diversity.

14. Strengthen the *Migratory Birds Convention Act* by establishing regulations to create new migratory bird sanctuaries and to increase penalties for violations.

15. Pass new regulations under the *Canada Wildlife Act* to increase penalties for violations and establish new wildlife areas.

16. Develop co-operative agreements with the provinces for the conservation of wetlands, particularly those of international importance (RAMSAR sites).

17. Improve enforcement of migratory bird regulations, including establishment of co-operative management boards with native peoples.

Also see suggestions cited in "National Parks," "Agriculture" and "Forestry."

> **Wild animals and plants are integral components of the ecosystems of Canada. Their health is a first-line indicator of the health of our environment and thus an important measure of our success in environmental protection. They cannot exist without satisfactory habitat.**
>
> ***Mary D. Gilliland***
> ***Saskatoon, Saskatchewan***

Protecting the Arctic Environment

In the consultation document, ***A Framework for Discussion on the Environment***, the Government identified Canada's Arctic as a region needing priority attention. To deal with the growing challenges of managing and protecting this unique ecosystem, it proposed an Arctic Environmental Strategy as an integral element of ***The Green Plan***. The strategy would put more emphasis on the sustainable development of northern renewable resources and would provide the basis for co-operative action on three fronts: identifying and dealing with pollution sources and their effects on the Arctic environment and northern people; monitoring Arctic ecosystems; and developing a systematic approach to defining protected areas. Priorities include the completion of transboundary water management agreements, the expansion of water-quality monitoring programs; and the clean-up of abandoned waste sites.

Subsequent to the release of ***The Green Plan*** consultation document, Indian and Northern Affairs Canada released a discussion guide on the Arctic Environmental Strategy. This document sets out in more detail the broad strategy and actions under consideration for dealing with the key issues of waste, contaminants, water and protected areas.

What Participants Discussed

Participants were concerned about the lack of understanding of the Arctic environment. Its unique conditions require unique approaches and solutions to even simple everyday problems.

They called on all levels of decision making in the North to adopt sound environmental principles and to base their decisions on full public participation at the grass roots level.

Better land-use planning, whether for industrial development or for setting aside protected areas, was identified as a priority. Benefits to local people need to be a priority.

Participants felt that the traditional knowledge of indigenous peoples can make an important contribution to understanding and to the education of all Canadians about the Arctic.

Many felt strongly that threats to the Arctic ecosystem and to human health from the presence of toxic substances in the animals, air and water of the whole circumpolar region must be reduced.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To foster sustainable renewable resource development in the Arctic.

Action

- Establish mechanisms for domestic and international co-operative management of wildlife and fisheries, through extensive consultation with traditional users and better research on populations.

- Establish two demonstration sites in the Arctic by 1993 to show whether forestry and commercial agriculture are sustainable activities in the North based on ecosystem management principles. Review the results by the year 2000.

- Encourage the move from non-renewable resources to renewables, through research and development, information, education and persuasion.

- Improve Northerners' opportunities for training, education and awareness, and employment; and infrastructure for the transportation and service industries.

- Develop resource policies for: import substitution, country foods, game farming, aquaculture, forestry, wildlife and fisheries management, recreation, tourism and wilderness uses.

Objective

To protect water quality and develop and implement waste management programs in the Arctic.

Action

- Explore with other governments and industry ways to develop packaging standards for and products to reduce impacts and volumes of solid waste.

- Develop alternatives to ocean and inland waters dumping for solid waste disposal, particularly where hazardous materials may be involved.
- Establish better sewage disposal systems specifically designed for northern conditions.
- Establish recycling facilities in the Yukon and Northwest Territories.
- Develop and implement waste handling technologies appropriate to the North.
- Clean up existing wastes at abandoned sites and outpost camps.
- Improve legislation, monitoring and enforcement in the northern environment.

Objective

To implement a greater degree of environmental protection in the Arctic.

Action

- Create a Territorial Environmental Agency, centred in the NWT, to develop and enforce stronger legislation for water and air quality, and for industrial emissions.
- Expand the Northern Science Institute to provide more technical and scientific information on Arctic ecosystems. This information can be used as a basis for legislation.
- Train Northerners in science and resource management fields particularly related to their future involvement in land claims structures.

> ***The Green Plan* must encompass the philosophy that humans are part of the environment...act within it, rather than interact with it.**
>
> *Yellowknife Workshop Report*

- Develop an Environmental Bill of Rights for northern residents and the Arctic ecosystem.
- Establish an environmental auditor or ombudsman for the Arctic and maintain an "environmental hot line" for complaints or information exchange.
- Encourage industry in the Arctic to develop and implement alternative processing or operating methods and technologies. Use the best practical technologies appropriate to northern conditions in pollution abatement and emergency prevention and response. Government should set a good example.
- Conduct a complete environmental impact assess ment of existing northern transportation systems, including research into alternatives, assessment of needs, and costs and benefits of different forms of transportation.
- Educate transportation users about adverse effects of the various alternatives, so they can make informed choices.
- Develop, with targets and schedules, a full complement of northern protected marine and terrestrial areas as part of a national system of parks, wildlife areas, heritage rivers and forests managed within an ecosystem framework.
- Establish an environmental heritage fund, separate from general revenue, and provided through levies on polluters or "unfriendly" products. This fund would be used to assist in establishing protected areas, recycling projects, and development of alternate technologies and educational materials.
- Initiate, by 1991, negotiations for a circumpolar Arctic Treaty.
- Implement a broad variety of measures as part of national programs aimed at correcting Canada's contribution to global warming trends. Measures could include increasing energy efficiency by incentive pricing, designing and constructing energy efficient buildings for northern conditions, and exercising land management options such as maintaining greenhouse gas sinks and controlling peatland drainage.

- Establish an Arctic measurement site associated with the Centre for Climatic Change and the University of the North. This would facilitate making improved measurements of climatic changes and their impacts and encourage training of indigenous peoples as environmental scientists.

Objective

To foster self-regulation and conservation of Arctic resources in the circumpolar region.

Action

- Strengthen circumpolar conservation both by developing and implementing a northern conservation strategy with strong community involvement, and by taking concrete steps to amend school curriculums in the Territories to reflect a conservation ethic.

- Foster Inuit self-regulation through encouraging land claim settlement and Inuit self-government and by providing training, so indigenous Northerners have a basis for their participation in management, research, policy and economic development that utilizes their traditional knowledge and community-based decision-making methods.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Establish two demonstration sites in the Arctic by 1993 to show how ecosystem management principles can be applied to forestry. Review the results by the year 2000 and incorporate successful techniques into forest practices.

2. Support research into waste and sewage disposal technologies for northern conditions.

3. Develop an inventory and implement a comprehensive clean-up program for waste sites, including abandoned military facilities, mines, fuel storage sites, camps and well sites.

4. Expand the northern network of water-quality monitoring sites.

5. Support research into the trends and sources of contaminants entering the Arctic, and into their impacts on the ecosystem and human health.

6. Implement programs for training Northerners in the environmental science and resource management fields.

7. Develop a full complement of northern protected areas as part of a national system of parks, wildlife areas, heritage rivers and forests.

8. Expand the Northern Science Institute to provide more technical and scientific information on Arctic ecosystems that can be used as a basis for legislation.

9. As part of the Government's National Strategy on Climate Change, establish an Arctic monitoring station in association with the University of the North.

10. Strengthen enforcement of legislation and regulations for the protection of water and air quality, and the control of industrial emissions and effluents.

11. Increase resources for research, information and education activities in relation to toxic contamination of traditional northern food sources.

Also see suggestions cited under other relevant sections of this report, particularly "Native Peoples," "Health Dimensions," "Toxic Substances," and "National Parks."

We should listen to our northern people especially our aboriginal people; they have a historical knowledge of what works and what doesn't.

The Coordinating Council for Energy Task Forces

The environmental effects of energy production, transportation and consumption are widespread and complex, playing an important, if not dominant, role in many of the more difficult environmental problems we face. In the consultation document, *A Framework for Discussion on the Environment*, the Government recognized the linkage between energy and the environment. The document noted that achieving sustainable development would require changes in the way Canadians make decisions about energy use and production and addressed the three key specific environment-energy issues: global warming, urban smog and acid rain.

What Participants Discussed

Across the country, people identified energy as a key issue requiring action in ***The Green Plan***.

Participants consistently agreed that Canada should demonstrate and practice a leadership role for the rest of the world by taking steps to immediately reduce its current level of energy consumption. There was a call for action on the part of governments, industries, academia, non-government organizations (NGOs) and consumers to work as a team in the development and implementation of new policies, programs and legislation to address energy issues. In developing these initiatives, many people recognized that there must be a significant shift in emphasis from supply-side management to demand-side management, with environmental and health factors incorporated into all decision-making processes.

There was unanimous support for demand-side management efforts that focus on improving energy efficiency and implementing energy conservation. At the same time, on the supply side, many stressed the need to develop alternative energy sources, particularly renewable resources. Areas identified for action included: research and development, education, policy and legislation, economic instruments, housing, transportation, infrastructure and institutional arrangements.

Participants clearly expect the federal government to be a role model for the rest of the country, funding priority issues on the demand side to stimulate change, by increasing its own energy efficiency, and by reflecting this philosophy in its purchasing patterns.

People were also concerned about nuclear power and looked to the federal government for a clear statement of its position on this issue. Nuclear waste disposal was one area specifically targeted for further research by both supporters and opponents of nuclear energy. There was certainly no agreement among participants as to whether nuclear power represents a viable energy source for Canada. There were also a wide range of opinions concerning energy megaprojects, with some people demanding more environmental considerations and others calling for a complete halt to such initiatives and removal of any further federal assistance to these projects. One strongly supported alternative to megaprojects was to encourage small-scale, locally generated power sources.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To improve energy efficiency and conservation throughout Canada.

Action

- Establish progressive energy-efficiency standards and guidelines for equipment, new and existing buildings and industry. To accomplish this, consider extending energy efficiency ratings, such as the "ENERGUIDE," to equipment, motors, vehicles, and other products.

- Develop codes of practice on energy efficiency for professional designers and builders.

- Set regulations to include energy efficiency to the R2000 standard in national building codes and industry standards for new and existing housing.

- Develop the concept of an energy ratio for floor areas of commercial buildings. Title could not be transferred without meeting the ratio.

- Enact a National Energy Efficiency Act to set minimum efficiency standards for appliances, motors, equipment, and other products. Include standards for efficiency in transportation, with higher standards for new vehicle fuel efficiency. Develop a "gas guzzler" tax and "gas sipper" rebate program.

- Establish energy audits that include efficiency and substitution as well as emissions and environmental considerations. This may require a mandatory program of accredited, impartial auditors.
- Increase co-operative funding to assist communities to organize and carry out energy audits and to develop detailed plans for reducing energy consumption in the community.
- Develop criteria for assessment of environmental impacts for all new energy construction projects.
- Increase energy efficiency levels for government buildings and downsize government vehicles.
- Establish incentives for the private sector to provide innovative financing for energy-efficient capital improvements.
- Use existing mechanisms, such as the World Energy Council's "Commission on Energy for Tomorrow's World," for building partnerships nationally and internationally to address global environmental problems associated with energy.

> **Canadian industry should strive to improve its efficient use of energy to conserve it and to further reduce the amount of harmful emissions. Opportunities for energy gains which make economic and environmental sense and which do not entail economic dislocations should be pursued.**
>
> **Individual Canadians should also be taking more steps to reduce their energy consumption through greater conservation and efficiency measures.**
>
> ***Canadian Petroleum Products Institute***

- Increase financial support for research and development into new, energy-efficient technologies.
- Encourage the transfer of technology among governments, academia and industries. Foster world-class expertise and promote collaborative research to reduce costs and share expertise.
- Establish a clearing house to make available the most efficient technologies and practices.
- Develop systems to recover low-grade energy from waste heat in equipment and appliances.
- Develop energy end-use databases and increase efficiency monitoring capability.
- Establish indicators of "embedded energy use," which take into account all of energy used to produce the product.

Objective

To amend existing policies and develop new policies that promote energy efficiency and conservation.

Action

- Develop an environmentally sensitive energy policy in co-operation with stakeholders, basing the policy on clear principles that include: emphasis on demand-side management, rather than supply; a move from non-renewables to renewables; inclusion of health and safety effects in decision-making processes and a policy statement on nuclear power.
- Modify existing federal policies that affect energy pricing to ensure a level playing field for the development of alternative energy sources.
- Establish a national transportation policy based on conservation and fuel efficiency. Participants expressed concern over federal cuts to the VIA Rail system and suggested a review of this decision to include environmental considerations.
- Develop a federal government procurement policy for environmental conservation, efficiency and substitution programs.

- Undertake a strategy of conservation and reporting similar to that established in the mid-1970s by the Canadian Industrial Program for Energy Conservation. Strategy development should include discussions with major stakeholders and should consider economic instruments, new technologies and regulation.

- Target coal as a primary energy source that could be reduced by attention to "clean" technologies, conservation and demand management. This approach could include: creating jobs in alternative energy sources; improving air quality; improving health and safety, and reducing land and social disruption.

Objective

To use economic instruments to promote conservation and substitution.

Action

- Consider linking mortgages, especially through Canada Mortgage and Housing Corporation, to energy efficiency, and provide incentives for building environments that would conserve energy.

- Consider the implications of establishing the following taxes: a carbon tax; an energy tax through which all sources of energy would be taxed; and a pollution tax, which would be applied to all items, according to the pollution created during production.

- Promote incentives for automobile manufacturers and consumers to produce and use "energy sipper" versus "energy guzzler" cars and trucks.

- Recognize, through annual awards, the best energy-efficient ideas and building designs.

- Ensure that energy pricing reflects the true costs, including environmental costs, of production and use.

- Change the federal taxation structure to reduce the depreciation rate for small plants.

- Investigate the application of emission caps, emission restrictions and permit trading.

> **It is well known that, dollar-for-dollar invested, energy conservation generates more employment, while "creating" more energy, than any other method of producing energy.**
>
> ***National Union of Provincial Employees***

- Develop performance indicators on industrial energy usage so that Canadian industry's performance can be compared internationally.

- Include energy efficiency and conservation considerations in federal/provincial agreements.

- Develop a Gross Environmental Assets indicator that includes energy, to parallel the Gross National Product.

Objective

To provide Canadians with more information and education on energy-related issues.

Action

- Include energy as a component in a national environmental education program.

- Develop educational materials stressing energy efficiency measures and identifying dollar savings and benefits.

- Provide the public with balanced information related to Canada's energy choices, alternatives and their implications. Include information on efficient and non-efficient appliances and equipment.

- Use a decentralized, or community approach to target all levels of society through public information advertising.

- Use a "participACTION" theme to develop wide spread public participation in conservation and efficiency measures.

- Include conservation campaign programs and provide incentives.

- Publish weekly or monthly statistics on energy consumption and air quality.

- Develop and implement education programs on energy efficiency for designers and builders.

- Support energy efficiency research and training in university programs such as engineering, architecture and planning.

- Develop environmental handbooks that encourage efficient energy use.

Objective

To double the fuel efficiency of car fleet and road haulage vehicles by 2005.

Action

- Increase taxes on fuel-inefficient cars and provide rebates for those that are fuel-efficient.

- Encourage use of new construction techniques to reduce weight while maintaining vehicle safety.

- Encourage design of new fuel-efficient engine types and control systems.

- Encourage research and development of alternative fuels.

- Legislate appropriate emission controls on all vehicles and support these with a vehicle inspection and maintenance program to ensure compliance.

> **The plan does not mention research into alternative sources of energy. With the threat of exhausting our non-renewable resources, research into alternatives is imperative.**
>
> ***Etsuko Amano and Stephanie McCracken***
> ***Gloucester High School***
> ***Gloucester, Ontario***

Objective

To develop alternative transportation modes.

Action

- Develop infrastructures for mass transit, such as subway systems and exclusive bus lanes on roads.

- Provide bike lanes.

- Develop infrastructure and incentives that favour the use of efficient freight transportation modes such as water and rail freight.

- Establish high-occupancy vehicle lanes and ensure synchronization of traffic lights.

- Evaluate the feasibility of "fast" trains.

- Provide information and incentives to encourage people to use mass transportation systems and car pools. Initiate a car pool registration system and stagger work hours.

Objective

To support the development and use of alternative energy sources, in particular, renewable energy.

Action

- Establish a national task force that involves the conventional fuel industry. This will stimulate a transition from a focus on conventional to renewable energy sources.

- Investigate all alternative energy sources using the "cradle-to-grave" approach. Set a target that requires 30 percent of all new vehicles sold in Canada to be powered by alternative fuels by 1995. Ensure that these vehicles remain competitively priced.

- Encourage the demand-side management of energy production. This approach incorporates concepts related to conservation, efficiency, alternatives, and appropriateness and modifies the existing rate structure of alternatives.

- Increase research and development of such alternative energy sources as hydrogen, methanol, ethanol, synthetic diesel fuel, biomass, geothermal power, wind, tidal power, and solar power. Explore co-generation.

- Evaluate the potential of using flare gas for electricity co-generation.

- Increase research efforts on disposal of nuclear waste.

- Explore the use of combustible waste for local power and heat generation.

- Set emission standards for all alternative fuels, including health and safety factors.

- Establish a National Impact Classification for power generation.

- Revise utility policies to allow utilities to choose more environmentally sensitive generation. Allow increased access to electricity grids and increase the use of alternatives.

- Work with the provinces to investigate and, where necessary, revise electric utility rate structures.

- Consider developing a North American Grid for power-sharing.

- Improve the environmental impact assessment of hydro development projects by including chemical, physical, wildlife, community, health and safety factors.

- Increase funding for small-scale energy projects designed to sustain and rejuvenate local communities or to offer alternatives to megaprojects.

- Review Canada's present and future use of nuclear power, addressing public health, safety and waste management issues.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Set up a national clearing house for environmental information, including information on energy efficiency to help Canadians better understand the actions they can take on their own to reduce energy consumption and greenhouse gas emissions.

2. Set targets and implement programs for improving energy efficiency in government facilities and vehicle fleets. Adopt procurement policies that encourage energy efficiency and substitution.

3. Establish a new R&D program to:
   - promote the development, commercialization and transfer of technologies that will enhance the efficient use of energy, particularly in energy-intensive sectors such as transportation; and
   - support research into longer-term alternative energy options, such as alternative liquid fuels and solar power

4. Through demonstration and information, promote market penetration of alternative energy options, including natural gas, methanol and energy from biowaste.

5. Enact a National Energy Efficiency Act to set out mandatory minimum standards for the energy efficiency of energy-consuming products, including household appliances, and heating and cooling equipment.

6. Strengthen fuel consumption standards for new automobiles.

7. Consider a "gas guzzler" tax/"gas sipper" rebate.

8. Initiate an environmental "participACTION" program to encourage individuals to conserve energy.

9. Settle on a structure and mandate for an environmental review of energy and nuclear power.

10. As follow-up to the work of the Royal Commission on National Passenger Transportation, work with the provinces on a strategy for encouraging increased use of urban mass transit in Canada.

11. With the provinces, initiate a cross-Canada review of electric utility pricing and regulatory structures and determine what, if any, changes should be undertaken to promote greater improvements in energy efficiency.

12. Consider appropriate economic instruments including taxation and tradeable emission permits to encourage energy conservation and reduce greenhouse gas emissions.

13. Develop a program to support energy efficiency research and training in university engineering, architecture and planning programs.

14. Develop a cost-shared program to perform energy audits on small-to-medium institutions and commercial and industrial operations.

15. Revise the national building codes to include improved energy efficiency standards, and develop codes of practice and education programs for professional designers and builders.

16. Ensure federal policies affecting energy pricing promote a level playing field for the development of energy efficiency and alternative energy technologies.

Also see suggestions cited in other sections of the report, particularly "Global Warming" and "Air Quality and Toxic Air Pollutants."

Land Use

Although not singled out for detailed discussion in the Government's consultation document, *A Framework for Discussion on the Environment*, the issue of land use is an important factor in the achievement of sustainable development. As a result, it was addressed in a number of contexts. For example, land use is one of the top concerns of Canadians when addressing issues such as agriculture, forestry, waste management and wildlife. It is also a key consideration with respect to energy and mineral exploration and development.

In agriculture, land-use decisions affect wildlife habitat, soil erosion, and the destruction of wetlands and woodlots. Land use decisions in forestry are vitally important. For example, the decision of how to log a particular stretch of forest is not only a forest management decision, but also a land-use decision.

In the consultation document, the Government noted that sustainable development was included in the enabling legislation of Forestry Canada. Sustainable forestry requires that managers consider the effects of their land-use decisions on wildlife habitat, recreation, biological diversity, carbon sinks and other elements of the forest ecosystem. The Government sought Canadians' views about how it could best contribute to the sustainable development of our forests.

Locating new waste disposal sites is also a land-use issue. Public concern about where waste management facilities are located is an increasingly formidable challenge to the economic management of Canada's wastes. While recognizing that waste management is primarily a provincial and local responsibility, the Government identified four essential requirements in locating hazardous waste treatment facilities in the consultation document. These were: provision of scientifically based information; community self-selection; community veto of particular sites; and, respect for the requirements under the Environmental Assessment and Review Process. The Government asked if there were additional steps governments could take regarding the location of waste management facilities, while meeting the growing need for such facilities.

The Government is the country's largest land owner and has the responsibility for environmentally sensitive stewardship of these lands. The consultation document contains the Government's commitment to adopting a code of environmental stewardship that will set specific goals and establish operating procedures. This will apply to the management of all federal lands.

What Participants Discussed

Many participants commented that the land base is a life support system equally as important as air and water. They requested conservation and preservation of the land resource by all levels of government, industry and individuals.

Many people expressed concerns over such misuses of land as soil degradation caused by inappropriate practices. They said it is the lack of co-ordinated planning that contributes to significant loss of highly productive lands. This applies to all types of lands: agricultural, forest, park or heritage.

Participants pointed out that in any ecosystem approach to achieving sustainable development, the complexities of jurisdictional conflicts could not become an excuse for ignoring problems.

Many participants recognized the jurisdictional restrictions facing the federal government, but the general feeling was that the federal government has the means, through information, funding and other incentives, to facilitate the provinces' participation in a process that would lead to the implementation of effective land-use policies.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To implement appropriate planning and management mechanisms to ensure the sustainable use of Canada's land base.

Action

- Develop co-operative, integrated resource management planning at the watershed and estuary level, with the long-term goal of establishing community-based planning committees. Provinces, through funding programs, could develop provincial land-use management plans to address the effects of conflicting land uses.

- Increase support for resource inventory and analysis programs such as the Geographic Information Systems (GIS), a key tool in integrated resource planning. GIS will enable easy, quick and reliable assessment of proposed uses. The databases should include near-shore and estuarine zones, which are also affected by terrestrial land-use management practices.
- Develop a management framework for urban open space development to guide land-use planning in urban areas. This should include the promotion of "green corridors" to limit urbanization and provide linkages between green areas.
- Establish conservation and natural management procedures for the National Capital Commission's holdings in the National Capital Region of Ontario and Quebec to increase biological diversity.
- Adopt a bio-regional perspective in land-use plan ning, and emphasize the notion of maintaining biological integrity while planning land and water use. This could be best achieved by creating a federal/provincial "land and water use management corporation" empowered by legislation to plan and direct sustainable land and water use. Consider application of various models such as the "Biosphere Reserve" to manage lands and waters adjacent to protected areas.

> **We will resist any policy... that treats land merely as a marketable commodity, that promotes the exploitation or the unequal distribution of the land, or that prevents those who till the land from being its real trustees...**
>
> *Melinda Moore*
> *Program Unit on Public Social Responsibility*
> *Anglican Church of Canada*

Objective

To establish regulatory mechanisms, at the federal, provincial and local levels, for the resolution of land-use conflicts affecting prime resource areas.

Action

- Develop stronger zoning regulations to preserve prime resource lands by: restricting development on highly valuable and productive resource lands; designating generous buffer zones along rivers and shore lines; and allowing no industrial development of resource extraction in reserve and wilderness areas or heritage sites.
- Establish stronger subdivision controls to protect fragile areas such as the the Niagara Escarpment in Ontario from new residential development.
- Require a public consultation or hearing process for the deregulation of any protected areas, or when allocating lands for specific purposes.
- Establish monitoring systems to ensure sustained protection.
- Use the Environmental Assessment and Review Process, economic levers and transfer payments to exert control on resource use and management where disagreements occur.

Objective

To develop comprehensive land-use policies as a way to achieve sustainable development.

Action

- Develop and implement, in partnership with the provinces, a national land-use strategy incorporating specific guidelines that relate to ecological and heritage preservation and place a high priority on resolving native land claims and the roles of natives in land-use management.
- Develop integrated federal resource management policies and programs that recognize interdependencies between and among resource sectors, possibly by

developing a comprehensive national soil/land/water conservation policy.

- Develop national guidelines to ensure the protection and zoning of resource lands and consider land capabilities in the disposal of surplus federal lands.
- Increase co-operation with other jurisdictions for integrated resource management policies that conserve prime resource lands against conversions to other uses.
- Develop a transport policy that will be co-ordinated with urban planning and will minimize transportation effects on the natural environment.
- Develop a "national heritage land policy" to protect heritage lands.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Develop and implement a code of environmental stewardship to govern the operations of all federal departments. Establish specific plans for the environmentally sensitive management of federal lands, including National Capital Commission lands.

2. Co-operate with other jurisdictions to conserve prime agricultural land, protecting it from conversion to other uses, by such means as development of national guidelines for protection and zoning.

3. Extend the National Soil Conservation Program under federal-provincial soil and water accords.

4. Provide incentives for farmers to retire marginal lands, establish buffer zones around bodies of water, and protect wetlands.

5. Manage all forests under federal jurisdiction on a sustainable, multiple-user basis for timber and fibre production, wildlife habitat and recreation.

6. In co-operation with the provinces, establish "old-growth" forest reserves representing each eco-region for research and education purposes.

7. Complete, by 1995, the Canada Ecological Land Classification System, with the participation of the provinces.

8. Increase support for resource inventory and analysis programs such as Geographic Information Systems, a key tool in integrated resource management.

9. Require a public consultation process for removal of federal lands from protected status.

10. Conduct resource assessments before dedicating land areas to single use, and develop guidelines for multiple-resource planning and use practices.

Also see suggestions in other sections of the report, particularly "Agriculture," "Forestry," "Wildlife," "National Parks" and "Wetlands."

Mining

Like most economic activities, mining sometimes places stress on the natural environment, and can contribute to such problems as water and air pollution, and the destruction of fish and wildlife habitat. In the consultation document, *A Framework for Discussion on the Environment*, the Government identified a number of possible actions for dealing with these issues that could directly affect mining, including:

- development of regulations under the *Canadian Environmental Protection Act* (CEPA) to control toxic wastes from metal mines, mills and smelters;
- a post-1994 acid rain control program;
- a wildlife population and habitat protection program;
- completion of the National Parks system;
- stronger enforcement of existing environmental legislation; and
- an Arctic Environmental Strategy.

What Participants Discussed

Participants emphasized that a sustainable mining industry is an essential component of the nation's economic base. They felt that exploration and mining companies should allocate sufficient attention and resources to the rehabilitation and reclamation of mining areas, and minimize the air and water pollution caused by mining and exploration. They wanted the industry not only to avoid mistakes in the future, but to clean up environmental damage from past activities.

Many emphasized the importance of extracting the maximum benefit from non-renewable resources, thereby reducing waste and making the best use of the earth's finite resources.

Participants also underlined the value of land-use planning processes, which ensure that non-renewable resource extraction occurs only after full consideration of the socio-economic and environmental factors that affect, or are affected by, non-renewable resource extraction. And finally, they pointed out that there is a need to determine an environmentally friendly mining technology within the marine environment.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To maintain and promote a viable and sustainable-mining industry that operates within a set of appropriate environmental guidelines.

Action

- Develop and apply modern mining and processing technologies that adhere to environmentally sustain able principles.
- Modify tax regulations to encourage the mining industry to allocate adequate funds for rehabilitation and reclamation of mining areas, and the minimization of drainage pollution.
- Introduce, across Canada, the requirement that the mining industry post rehabilitation bonds.
- Develop a code for responsible exploration and mining activities.
- Define sustainable development for non-renewable resources, such as efficient production, and the effective and wise use of the resource.
- Consult with the mining sector to formulate more specific environmental policies.

Note mining industry concerns on the percentage of land designated for parks in the "National Parks and Sites" section of this document.

Objective

To increase emphasis on extracting the maximum long-term benefit from non-renewable resources in all aspects of the extraction-processing and reprocessing chain.

Action

- Increase emphasis on the "4 Rs" (Reduce, Reuse, Recycle and Recover) in capital and consumer goods to maximize the use of finite non-renewable resources.

- Stockpile waste products from mining activities for future recycling.
- Increase research into substitutes for non-renewable resources.
- Change agricultural practices to reduce reliance on chemical fertilizers and fossil fuel energy.
- Research more effective methods of mineral extraction.

Objective

To establish land-use planning procedures that allow mining decisions to be made with due recognition of overall environmental factors.

Action

- Develop, in all parts of the country, long-term resource management plans with built-in mechanisms to resolve land-use conflicts.
- Increase development of mineral resource inventories to improve decision making, minimize land-use costs and promote environmentally acceptable mineral developments.
- Encourage local and regional communities to give full consideration to the socio-economic and environmental effects of non-renewable resource development proposals.
- Identify sensitive ecological zones and prohibit development of mining claims until consideration is given to other land-use options, such as park designation.
- Increase consideration of competing interests such as hunting, trapping, fishing, forestry and park interests, when developing mineral extraction land-use strategies.
- Review provincial and federal environmental land-use regulations to avoid duplication.
- Utilize public advisory committees to maximize participation of relevant interests in the wise steward ship of land before, during and after mining.

Objective

To increase the recognition of sustainable development principles in offshore mining activities.

Action

- Improve studies to evaluate the effects of mineral exploration on marine environments.
- Develop and apply mining process technologies that allow for environmentally sustainable development.
- Maintain the association between mining groups and the Department of Fisheries and Oceans to meet fish habitat requirements.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Review existing federal mining tax regulations to ensure their consistency with the Government's environmental objectives.

2. On a priority basis, assess the toxicity of wastes from mines, mills and smelters and, where appropriate, develop draft regulations under CEPA for public review and comment.

3. Expand the Acid Rain Control Program to include the western provinces, with emissions capped at an appropriate level.

4. Working with the seven eastern provinces, establish a program to cap sulphur dioxide emissions at 1994 levels.

5. Introduce a Canada Offshore Minerals Management Act.

Also see suggestions in other sections of the report particularly "Toxic Substances," "Waste Management," "Water," "Air Quality and Toxic Air Pollutants," "Land Use" and "National Parks."

Decisions will have to be made on how to repair past damage and on "how to do things right" in the future. Priorities will have to be set in both so that the remedial work can be attentive, and so that it can be cost-effective as well.

British Columbia and Yukon Chamber of Mines

Wetlands

Wetlands form an integral part of the Canadian ecological mosaic, serving as important wildlife and fish habitats, and as a crucial link in Canada's freshwater systems. In the consultation document, *A Framework for Discussion of the Environment*, the Government of Canada addressed the important issue of wetlands in these broader contexts. The "Agriculture" section of that document stressed that agriculture should become more environmentally sustainable. This concept recognizes that wildlife concerns, including the protection of wetlands, must be taken into consideration. The "Water" section of the document emphasized the need for clean freshwater systems. In it, the Government asked Canadians to consider options such as increased research on toxic substances in water and made commitments to clean up the Fraser River. The "Fisheries" section identified the major problem of the freshwater fisheries to be destruction or pollution of habitat, and asked Canadians for ideas on how to best ensure that fish habitat is protected.

Protecting natural ecosystems and wildlife habitat forms the core of the "Preserving Ecological and Heritage Resources" section of the consultation document. Important wetlands are currently preserved in National Parks. One question posed in the document concerned priorities for future protection — should the protection of wetlands be a priority consideration in the establishment of new parks? The Government also made a commitment to maintaining and enhancing wildlife populations for all Canadians, and said that it was considering a program to protect wildlife populations and their habitats.

The Federal Policy on Wetland Conservation is currently in the final stages of consultation. The policy's objective is to promote the conservation of Canada's wetlands to sustain the ecological and socio-economic functions of wetlands, now and in the future.

What Participants Discussed

The conservation of Canadian wetlands was of major importance in the minds of many participants. They agreed with the World Conservation Strategy's identification of coastal and freshwater wetlands as one of the most important life-support systems on this planet.

From the viewpoint of the participants, the federal role is one of pursuing proactive, co-operative efforts to arrive at a comprehensive and effective approach to conserve and preserve Canada's wetlands. Participants felt that Canadians should be made more aware of the importance of this valuable resource, which makes up 14 percent of the total Canadian environment. On the whole, participants felt that a suitable approach could be achieved by completing or expanding current federal initiatives.

What Participants Recommended

The following is a digest of the recommendations made by various participants in the consultations, the objectives, and specific actions in support of the objectives.

Objective

To conserve Canadian wetlands and reclaim and protect those wetland areas already damaged by human activities, through a co-operative national approach.

Action

- Adopt and implement the federal policy on wetland conservation that is now in the final stages of consultation.
- Review federal policies and programs that are negatively affecting wetlands.
- Assess all developments on wetlands to determine how they will affect the environment.
- Encourage the preservation of wetlands through government agricultural initiatives.
- Apply the goal of "no net loss" in the area of wetlands.
- Reaffirm the 15-year commitment to the North American Waterfowl Management Plan.
- Develop and implement regulations to control the use of all-terrain vehicles in wetland areas.
- Eliminate subsidies for wetland drainage programs.
- Provide a funding program to assist private-sector organizations in the buying of and caring for wetlands.

- Educate the people of Canada about the value and the need to conserve wetlands.

Suggestions for Further Consideration

The following are possible policy, program and legislative elements of ***The Green Plan***. They draw on the recommendations put forward by various participants in the consultations and build on the framework set out in the Government's consultation document. They are presented to provide greater focus for public debate on priority setting for federal action. Participants in the national wrap-up session in Ottawa, August 20 and 21, will be asked to review these suggestions and provide the Government with specific recommendations on priorities.

1. Finalize and implement the Federal Policy on Wetland Conservation, and initiate a co-operative process with the provinces and territories through the Canadian Council of Ministers of the Environment to develop and implement a National Wetland Conservation Policy.

2. Review and make appropriate changes to federal policies and programs that have a negative effect on wetlands.

3. Develop co-operative agreements with the province for conservation of wetlands, particularly those of international importance (RAMSAR sites).

4. Encourage the preservation of wetlands on private agricultural lands through government agricultural initiatives.

5. Confirm the government's 15-year commitment to the North American Waterfowl Management Plan.

6. Eliminate subsidies for wetland drainage programs.

7. Consider innovative economic incentives, such as "green bonds," to assist private sector and community organizations in the acquisition of, and caring for, wetlands.

8. Educate Canadians about the value of wetlands and the need to conserve them.

9. Provide additional resources to increase fundamental research on wetland ecology, promote national wetland inventories and evaluations, and monitor wetland losses and additions.

Also see suggestions in other sections of the report, particularly "Wildlife," "National Parks," "Agriculture" and "Land Use."

> **A... land-use policy is required to take the "development" pressure off important agricultural lands and wetlands, as well as other "ecologically critical lands" in Canada.**
>
> ***Faculty of Environmental Studies at York University***

Conclusion

The Government believes that sustainable development should be a key, long-term objective for this country. Achieving sustainable development will, however, require the concerted effort of Canadians at all levels of society – as individuals, in their business lives, in their communities, and through their political institutions. If Canadians are to be called upon to act, to bring environmental considerations into their day-to-day decision making, then they can rightly expect to be consulted in the development of a comprehensive natural environmental strategy. That is what ***The Green Plan*** consultation process, which began last March, is all about.

This document summarizes the results of the consultations process to date. However, it does not represent the end of consultations. Indeed, an important next step is the national consultations session to be held in Ottawa on August 20 and 21, 1990. Participants in that session will be asked to review the Suggestions for Further Consideration set out in this paper. In particular, they will be asked to provide more focused advice, on the basis of those Suggestions, as to the possible policy, program and legislative elements of ***The Green Plan***. This advice will provide an important contribution to the Government's final decisions on ***The Green Plan***.

These decisions will be taken over the coming months, leading to the tabling of ***The Green Plan*** in Parliament in the fall of 1990. It must be recognized, however, that the release of ***The Green Plan*** cannot be the end of the story. The environmental strategy and action plan must be implemented, and that will require consultations, co-operation and the commitment of Canadians at every step of the way.

The Green Plan Consultation Process

In March of 1990, the Minister of the Environment, on behalf of the federal government, announced a major consultation process on the development of an action plan on the environment.

The consultations were intended to incorporate the comments of Canadians, to identify workable solutions to the environmental issues identified, to gain support for the implementation of solutions, and to obtain support for the Government's intention to implement sustainable development in Canada.

The Minister also made it clear that he was anxious to proceed with the implementation of environmental solutions. He asked for consultations to be completed in time for a final plan to be presented to Canadians by the end of 1990. The timeframe allowed four months (March-June) for the planning and delivery of the regional information and consultation sessions across Canada, four weeks for the preparation of a document summarizing workshop results, another four weeks for the preparation and delivery of a national wrap-up consultation session, and one month for the preparation of a plan for presentation to Cabinet.

In order to help focus the public discussion, the Government prepared a background paper entitled, "A Framework for Discussion on the Environment." This paper summarized for Canadians the proposals that could be put forward in an action plan, and outlined the reasons for the policy directions the Government proposed to implement sustainable development.

The Consultation Process

A number of consultation approaches were considered, including the public "panel-type" enquiry, the public hearing, public meeting formats and the multi-stakeholder consultation format.

While all approaches have their positive points, the Minister opted for the latter for several reasons; the multi-stakeholder consultation process had been used successfully by Environment Canada in the past and many stakeholder organizations were familiar with the approach; the process allowed the participants themselves to identify areas of consensus and major disagreement and make recommendations as a group, giving a greater voice to their proposals; and, the process allowed participants to take a more focused approach to each issue. This latter point was particularly important in light of the broad range of issues being presented to Canadians.

The multi-stakeholder consultation process was developed by environmental stakeholders themselves at meetings held under the auspices of the Niagara Institute in 1985. The process, its principles and protocols have been documented in a publication entitled "Public Participation Handbook" available from Environment Canada.

A stakeholder is defined as an individual, special interest group, government or other organization that may have a vital interest in the issue, may be affected by the outcome, and/or may make an important contribution to its resolution.

Public participation can involve a broad spectrum of activities, from a simple one-way public announcement or information session, to a detailed consultation session involving debate and decision making. The process that was, in fact, used involved two distinct phases; information sessions and consultation sessions. This two-phased approach allowed the Government, during the first phase, to inform Canadians about the contents of the Framework document, the consultation process, and options available for their participation in the process. The second phase would involve consultation sessions held over a two-day period, allowing for full debate of the issues and for the stakeholders' formulation of their concerns and recommendations to the Government. Canadians were also invited to submit written briefs.

The Minister of the Environment announced the beginning of the consultation process on March 29, 1990 and officially released the Framework document. He indicated his intention to consult all Canadians on the formulation of a Green Plan. Environment Canada distributed approximately 150,000 copies of the Framework document. The mailing also announced the dates and locations of information sessions to be held in coming weeks. The Minister's announcement was followed by national and local media announcements of the exact time and location of the information sessions.

The Information Sessions

A total of 41 information sessions were held in 39 cities between April 18 and June 12, 1990. The sessions were open to all Canadians and approximately 5,700 attended. The major objectives of the information sessions were to inform as many Canadians as possible about this major Government initiative; to let them know how they might make their views known and become involved in the consultation process, and to inform them about the contents of the Framework document. The information sessions were also intended to clarify the issues raised in the document, and to respond to specific questions about environmental issues.

While the design of the information sessions varied slightly from region to region (for example, in northern cities the information and consultation sessions were held back-to-back to reduce the costs of travel for participants), the objectives remained constant. Generally, the sessions included a presentation of background information on the document and the process, and the opportunity to visit information tables where participants' specific questions could be answered on each topic area in the document.

This "open house-information table" approach was chosen because the broad range of issues presented in the discussion document made it difficult to cover all of the topics in a timeframe suitable to participants. The informal setting also allowed officials and the public to discuss issues in greater detail.

Officials from the federal government departments involved in ***The Green Plan*** policy initiative attended as resource people to answer questions on all aspects of the Framework document. Appendix A lists the cities where the information sessions were held, the dates, and the attendance for all sessions.

The Consultation Sessions

The consultation sessions were held between May 24 and June 26, 1990 in 17 major cities across Canada. Over 3,500 Canadians attended, representing all segments of Canadian society. Participants included individuals, native groups, environmental groups, church groups, labour, industry, business and associations, academics, youth, municipalities and Members of Parliament. The dates, locations and attendance are outlined in Appendix B.

> **Industry and all stakeholders must be involved with the Government in planning any environmental programs, policies or legislation that will affect them. Consultation is particularly important in early stages of all initiatives to allow identification and planning for environmental impacts, and to determine the most efficient implementation of protection measures.**
>
> ***Canadian Petroleum Association***

The intent of the consultation sessions was to encourage participants to discuss the issues in the Framework document, to suggest solutions and to make recommendations to the Government. The sessions were held over a two-day period, and consisted of an opening plenary attended by all participants, with workshops on specific topics. Participants remained in the workshop for which they registered for the duration of the consultation session.

The consultation sessions and workshops were moderated by independent facilitators, and workshop proceedings were recorded by designated rapporteurs.

Participation in the consultation sessions was principally by invitation, and individuals who registered either at information sessions or by phone attended. Those who appeared and registered at the last minute, and were willing to attend the full sessions, were welcome to participate.

The consultation session offered an ideal opportunity for Ministers to participate in the process. The first-day plenary was opened by a senior regional Environment Canada official. A Cabinet Minister was always present to give participants a word of welcome, and to set the expectations for the session. Participants then went off into workshops according to the themes raised in the document. Comments received at the information sessions helped to identify themes of major interest. In most regions, participants were required to pre-register for their choice of workshop themes. This approach made it easier to ensure that all workshops had a balance of representatives from all major stakeholder groups.

As their schedules allowed, Ministers visited workshops and listened to the dialogue among participants. At the end the first day, participants presented their initial outline of issues through an independent rapporteur for each group.

After 1 1/2 days of workshop discussion, participants returned to report on areas of consensus identified by their group and to present their recommendations. One or more Ministers were present to hear the workshop reports, to thank participants for their work, their dedication and their time, and to outline the next steps in the process. Each workshop produced a brief report which was sent to participants shortly after the session.

Other Opportunities to Participate

In addition to attending the information and consultation sessions, Canadians were given other means to express their views.

People were encouraged to submit written briefs or letters to the Minister of the Environment. Almost 1,000 briefs and letters were received.

If people did not wish to write, they could call in their views or concerns or ask for clarification by using 1-800 phone lines set up in each province or territory. Over 5,000 calls were received.

Questionnaires were distributed at information sessions where they could be filled out immediately or returned at a later date. Almost 2,000 questionnaires were received.

Postcards were also distributed at the information sessions. These provided a quick way for people to express their views. Approximately 1,600 postcards were received from Canadians. A regional breakdown of the participation is outlined in Appendix C.

The Synthesis Document

Following the round of consultations, the challenge became to capture Canadians' concerns and recommendations, and present them in a synthesis document. The document was sent to all workshop participants and used as the basis for a National Workshop held in Ottawa in late August 1990.

The synthesis document is structured along the major chapters and themes of the Framework document. It includes other major issues highlighted by Canadians in their workshops and briefs as being areas of major concern that were not captured in the Framework document (Energy, for example).

The Green Plan Consultation Team reviewed all the information received. Initially, team members were asked to review briefs and workshop reports in detail so that information could be coded to the appropriate theme or chapter. Then these coded briefs and reports were copied to separate binders on each theme or subject.

In addition to the information from briefs and workshops, the binders contained analysis of response forms and copies of postcard comments sent to the Minister.

Each subject was prepared by a two-member team, and each team was responsible for the analysis of several binders. They reviewed the binders in detail, and prepared summaries outlining in narrative form the general views expressed by participants under the heading "What Participants Discussed." Recommendations and requests for action were presented in point form under the heading "What Participants Recommended."

The consultation process will have served a useful purpose if it alerts Canadians to the complexity of global environmental issues and enlists their aid in finding environmental solutions.

Mining Association of Canada

The Synthesis document includes a list of possible policy, program and legislative elements of ***The Green Plan***, "Suggestions for Further Consideration". These are provided to stimulate a more focused public debate on priority setting.

The Management of the Consultation Process

Several factors affected how this multi-stakeholder consultation would be managed, and what type of structure would be used to manage it. The process involved many individuals.

The consultations were aimed at all Canadians and would require across-Canada contacts to reach as many individuals as possible. There was a need to ensure consistency across the country so that all Canadians could have an equal opportunity to participate. Ministers had made it clear that they wanted to be kept informed and involved throughout the process. Other federal government departments wanted to participate and to be kept informed. There was also a need for a mechanism that would allow stakeholders to influence the process where necessary.

The consultation process was managed centrally by a National Director of Consultation, assisted by a number of individuals in Ottawa. The Director established the parameters for the information and consultation sessions to ensure some uniformity across the country.The actual delivery of the process was assigned to the chairpeople of the Committees of Regional Executives (C.O.R.E.) in each of Environment Canada's five regions. The chairperson contracted independent facilitators familiar with the multi-stakeholder consultation process to deliver the consultation workshops and prepare the reports on the workshop. The consultants also organized the information sessions.

A National Advisory Committee was established, at the request of the Minister of the Environment, to represent the interests of stakeholders in the management of the process. A membership list is attached as Appendix D.

What Participants Discussed

Many comments were received concerning the consultation process. Many participants and associations expressed their full support for the consultation process, while others were very skeptical about the purpose of the consultations, the type of process and the ultimate use of the results. In some cases, people believed that the consultations were being undertaken to the detriment of immediate action. Nevertheless, most people suggested ways to improve or expand the consultations and emphasized the need to make the process as useful and productive as possible.

Some individuals believed that the process as designed did not allow for the maximum participation of Canadians, principally for two reasons; the time allowed for the process, and the lack of precision in the Framework document. People stated that there simply was not enough lead time to allow for maximum participation. Many also felt that the consultation document was not specific enough to allow people to reach conclusive and substantive solutions in the time allowed, and they encouraged the Government to view the consultation results in the context of this restriction. Despite the early criticism and skepticism, participants took part wholeheartedly in the process. There appeared to be an evolution in feelings about the consultation process. Individuals emerging from workshops were generally very pleased with their level of participation and the workshop results. Especially during the information session, the public generally welcomed the opportunity to ask in-depth questions of federal officials, were often pleased with the high degree of knowledge, and enjoyed the dialogue.

Nearly all participants stated that consultations on a matter as important as the environment should be an ongoing process and not end with this current ***Green Plan*** exercise.

Several briefs mentioned the consultations on NOx and VOCs as an excellent example of ongoing consultations. Begun in 1989 with a first workshop session which resulted in a draft management plan, a number of working groups were established to improve the precision of the options in various subject areas, such as public information or technology development. In the spring of 1990, another consultation workshop was then held to allow stakeholders to review and discuss another draft of the plan.In addition, many told us that they would welcome the opportunity to consult on other Government policy and regulatory initiatives and suggested that the same consultation format be used with more lead time and more focused information. Canadians especially appreciated the opportunity to meet and discuss issues with government officials and each other, an opportunity provided by both the information sessions and the consultation sessions.

Ministers who attended the consultations were impressed by the participants' commitment and by the quality of the workshop recommendations. The majority left the consultation workshops feeling that they had contributed to the formulation of the environmental action plan for Canada.

What Participants Recommended

Participants made it clear that they wanted the federal government to strengthen and maintain ongoing consultations in development of ***The Green Plan***.

Some people wanted to replace single-issue committees and consultations with a consistent multi-stakeholder forum that advises government, and especially the Canadian Council of Ministers of the Environment, on the status of individual environmental matters and how they interrelate.

Participants also wanted to ensure that in future consultations, governments provide more specific and focused information on the issues, priorize concerns, and advise on the full costs. In addition, they wanted to have better and earlier distribution of the baseline information, and more lead time to allow for appropriate response from stakeholders.

In general, participants believe that consultation processes must be co-ordinated with other consultative mechanisms such as round tables.

Appendix "A"

Information Sessions

Location	Date	Attendance*
Atlantic		
1. Fredericton	April 19, 1990	80
2. Charlottetown	April 24, 1990	60
3. Halifax	April 27, 1990	200
4. St. John's	May 5, 1990	150
Quebec		
5. Montreal	April 19, 1990	160
6. Trois-Rivières	April 20, 1990	20
7. Chicoutimi	April 25, 1990	33
8. Rimouski	April 27, 1990	7
9. Quebec	May 1, 1990	80
10. Sherbrooke	May 3, 1990	48
11. Rouyn-Noranda	May 5, 1990	18
Ontario		
12. Windsor	April 21, 1990	65
13. Sarnia	April 24, 1990	120
14. Ottawa	April 25, 1990	400
15. Toronto	April 27-28, 1990	485
16. St. Catharines	May 1, 1990	180
17. Thunder Bay	May 5, 1990	131
18. Sudbury	May 9, 1990	111
West & NWT		
19. Edmonton	April 24, 1990	135
20. Calgary	April 26, 1990	215
21. Lethbridge	April 27, 1990	136
22. Grande Prairie	April 30, 1990	45
23. Regina	May 1, 1990	208
24. Saskatoon	May 3, 1990	191
25. Winnipeg	May 7, 1990	461
26. Brandon	May 9, 1990	133
27. Thompson	May 11, 1990	130
28. Inuvik	May 29, 1990	124
29. Iqaluit	June 12, 1990	84
30. Yellowknife	June 31, 1990	175
British Columbia and Yukon		
31. Nanaimo	April 18, 1990	90
32. Vancouver	April 20-21, 1990	375
33. Prince George	April 30, 1990	126
34. Queen Charlotte City	May 2, 1990	82
35. Cranbrook	May 7, 1990	175
36. Kelowna	May 9, 1990	307
37. Victoria	May 15, 1990	276
38. Dawson City	May 24, 1990	55
39. Whitehorse	May 22, 1990	94

* Attendance figures are approximate because many did not officially register. The figures listed are the best guesses of the facilitators.

Appendix "B"

Consultation Session

Location	Date	Attendance
St. John's, Newfoundland	June 7 & 8	180
Charlottetown, Prince Edward Island	June 19 & 20	120
Halifax, Nova Scotia	May 28 & 29	200
Fredericton, New Brunswick	June 11 & 12	200
Quebec City, Quebec	June 1 & 2	130
Montreal, Quebec	June 13 & 14	270
Ottawa, Ontario	June 25 & 26	400
Toronto, Ontario	June 4 & 5	320
Winnipeg, Manitoba	May 24 & 25	180
Regina, Saskatchewan	May 29 & 30	200
Edmonton, Alberta	June 7 & 8	300
Calgary, Alberta	June 12 & 13	290
Vancouver, British Columbia	June 20 & 21	220
Victoria, British Columbia	June 14 & 15	90
Iqaluit, Northwest Territories	June 13 & 14	90
Yellowknife, Northwest Territories	June 1 & 2	150
Whitehorse, Yukon	June 8 & 9	44

Appendix "C"

Green Plan Consultation Process Vital Statistics

	Alberta	Quebec	Ontario	West/North	Pacific/Yukon	Total
No. at Info. Sessions	500	360	1426	2000	1750	6036
No. at Consult. Sessions	800	466	594	1400	350	3616
Hotline Calls	919	61	3000	2000	600	6580
Q'nnaire Forms						1919
Postcards	18%	17%	27%	30%	8%	2451

More than 1,000 briefs and letters were received.

National Advisory Committee On the Green Plan Consultations

List of Members

Dr. Leslie Whitby (Chair)
Director, Green Plan Consultation Team

Mrs. Patricia Dumas
Chief of Staff
Minister of the Environment

Mr. Robert J. Laframboise
Environment Canada

Mr. Stephen Hazell
Canadian Arctic Resources Committee

Ms. Janice Harvey
Conservation Council of New Brunswick

Mr. Rob MacIntosh
The Pembina Institute

Mr. J.A. O'Connor
The Canadian Chemical Producers' Association

Mr. Peter Vivian
Business Council on National Issues

Mr. Tim Page
The Canadian Chamber of Commerce

Mr. Ed. Barisa
Canadian Bar Association

Mr. Patrick McGuiness
Fisheries Council of Canada

Dr. R.F. Wollard
Canadian Medical Association

Dr. Sandy J. Murray
Canadian Medical Association

M. Christian Simard
Union Québecoise pour la Conservation de la Nature

Mr. P. Douglas Bruchet
Canadian Petroleum Association

Mr. Andreas Dolberg
The Canadian Federation of Agriculture

Mr. Walter Janvier
Indian Association of Alberta

Ms. Lori Montour
Assembly of First Nations

Mr. R. Lloyd Gamble
Inuit Circumpolar Conference

Mr. François Bregha
The Rawson Academy of Aquatic Science

Mr. J.H. Cayford
Canadian Institute of Forestry

Mr. Don Gamble
Sustainable Fisheries Network

Mr. Joe Thwaites
Canadian Student Pugwash

Ms. Michelle Bayard
Jeunesse du Monde

Ms. Janet MacLachlan
Canadian Public Health Association

Dr. Kate Davies
Canadian Public Health Association

Mr. Paul Hough
Royal Society of Canada